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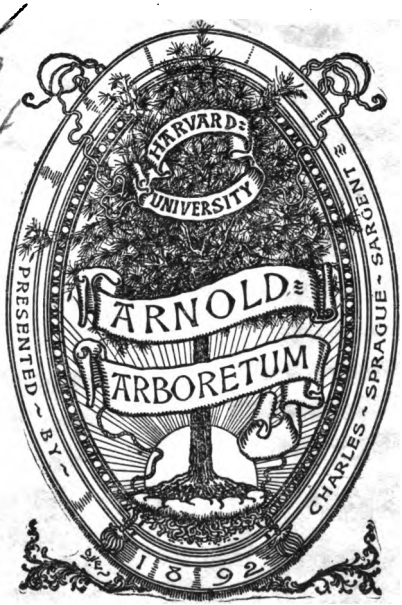

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SILVA CAPENSIS,

OR

A DESCRIPTION

OF

SOUTH AFRICAN FOREST-TREES,

AND

ARBORESCENT SHRUBS,

USED FOR

TECHNICAL AND ŒCONOMICAL PURPOSES,

BY THE

COLONISTS OF THE CAPE OF GOOD HOPE.

BY L. PAPPE, M.D.

Si quid novisti, rectius istis,
Candidus imperti, si non his utere mecum.
Horat. Epist. I. 6, 67 and 68.

CAPE TOWN:
PRINTED BY VAN DE SANDT DE VILLIERS & Co.

1854.

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Van de Sandt de Villiers & Co.,
Printers.

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TO

JOACHIM STEETZ, ESQ., M.D.,

OF HAMBURG,

THE ZEALOUS BOTANIST,

THIS LITTLE WORK

IS INSCRIBED, AS A SLIGHT MARK OF THE
RESPECT AND ESTEEM OF HIS FRIEND,

THE AUTHOR.

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PREFACE.

The good-will with which a former publication of mine (in 1850) on the medical properties of South African indigenous plants, was received, gives me that encouragement without which a writer, unless he be imbued with a notion of self-importance, will hardly venture to thrust himself again upon the indulgence of his readers. To enlarge on the present work, and to comment on its merits, will be the task of scientific and impartial judges. Suffice it to state, that the author has done his utmost, in collecting and digesting every information he could possibly obtain on so important a subject as the capability of the Cape colony with regard to useful Forest-trees and Arborescent Shrubs. Whatever may be thought of this treatise, it will tend to open the eyes of the incredulous, and shew to the colonists and to the world at large, that South Africa is not so destitute of superior woods as most people imagine. Yet, although more than two centuries under civilization, and governed by European rulers, the Cape still remains, and will continue to remain, an almost inexhaustible source of novelty. What a pity it is that there is no *scientific establishment* here, for investigating into, and reporting on the vegetable wealth of the Colony. True it is, there is a *so-called Botanical Garden* in Cape Town, but it does not fulfil the purpose for which it was called into existence; it gives no satisfaction to scientific residents and strangers, and has become the object of severe but just censure from abroad.* It may do exceedingly well as a place of recreation, but will never meet the ends of *Science*, unless superintended by a *scientific botanist*.

In several parts of this essay, the reader will find observations on the wanton usage, annually exercised in the Colony, of setting fire to the mountains and bushes, an injurious practice, which in one

* Sir W. Hooker's Journal of Botany and New Garden Miscellany, Vol. 4, pag. 215 and 216.

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sweep destroys a vast quantity of the most valuable timber and useful woods. When, twenty-four years ago, I arrived in the colony, *Protea coccinea.* R. Br., one of the handsomest of the proteaceous tribe, adorned the sloping sides of the Devil's-head Mountain. Since that period, this beautiful shrub has gradually disappeared, and seems now to have been altogether annihilated. It is well known besides, that wooded ravines and forests increase the moisture, and produce springs and running streams, the scarcity of which is but too often felt in this dry country. That the legislature of our days have not yet enacted sound and stringent laws against the repetition of an outrage of such magnitude, is a matter of deep regret and just astonishment.

It would be an act of ingratitude on my part, were I to withhold from public notice the names of those gentlemen, who, either by advice and information, or by furnishing necessary materials, contributed so much in furthering this publication. To S. HARTMAN, Esq., M.L.A., I am indebted for a great deal of intelligence, respecting the utility of many trees, peculiar only to the Eastern Province. To JOHN SCHEUBLE, Esq., of Cradock, near Port Elizabeth, for the alacrity and despatch, with which he procured specimens of the most valuable woods from the forests of the Uitenhage district. And lastly, but not least, to my most excellent friend CHARLES ZEYHER, Esq., the well-known South African Traveller and Botanist, whose experience and practical knowledge of the Cape Flora is only surpassed by his modesty.

Cape Town, 27th December 1854.

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SOUTH AFRICAN
FOREST-TREES AND ARBORESCENT SHRUBS.

CAPPARIDEÆ. Juss.

1. Capparis Albitrunca. Burch. (*Witgatboom.*)—*Branches* unarmed, spreading. *Leaves* coriaceous, lineari-elliptic, blunt, attenuate at base, entire, smooth, glaucous beneath. *Flowers* small, racemose. *Racemes* few-flowered, axillary, shorter than the leaves. *Calyx* 4 cleft; *petals* 4; *stamens* numerous. *Fruit*, a berry.

The trunk of this tree appears from a distance as white-washed, and hence its vernacular name. Height of stem from 10 to 12 feet; diameter from 9 to 10 inches. *Bark* pure white. *Wood* white, tough, used for yokes and other œconomical purposes.

Grows in the woods near Sunday River and other parts of the Eastern Province. Fl. October—November.

FLACOURTIANEÆ. Rich.

2. Phoberos Mundtii. W. Arnott. (Eriudaphus Nees. ab. E.) *(Klipdoorn.)—Branches* spreading, *twigs* compressed; the young shoots from the root, thorny. *Leaves* coriaceous, rhomboid-elliptical, acute, bluntly toothed, veined, glossy above; *racemes* axillary 4-6 flowered. *Perianth* 10 cleft; its bottom clothed with dense, cushion-like hairs. *Flowers* small, white; *stamens* in many rows, numerous; *anthers* beaked; *style* thick. *Fruit* baccate, roundish.

Height between 20 and 30 feet, diameter 3 feet and more. *Bark* thin, grey. *Wood* hard, close, and highly useful for builders, and especially for wagonmakers.

Found in the aboriginal forests of the Tzitsikamma, and also, but sparingly, on the east side of Table Mountain, in Kirstenbosch. Fl. April—May.

3. Phoberos Ecklonii. W. Arnott. (Eriudaphus Nees. ab. E.) (*Roodpeer.*)—*Branches* divaricating;

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twigs compressed. *Leaves* broad, alternate, leathery, rhomboid-lanceolate, acute, indistinctly dentate, smooth, glaucous. *Racemes* axillary, simple, shorter than the leaves. *Perianth*, flowers and fruit, as in the former species.

A forest tree 20 to 30 feet high and 3 feet in diameter. *Bark* black, chinky. *Wood* hard, heavy, close; takes a fine polish, somewhat resembles Mahogany, and answers well for all kinds of furniture. In the Colony it is mostly used by wheel-wrights for axles, fellies, and spokes, and would suit well in the construction of mills.

This tree is common in the primeval thickets of the Victoria district, and flowers in May.

A third species of the genus: *Phoberos Zeyheri*. W. Arnott, (*Wolfs-thorn*), the spines of which attain a length of from 5 to 6 inches, is, I presume, what is called *Hoenderspoor* (Cockspur) by the Dutch inhabitants of the interior. It is from 15 to 20 feet high, and from 8 to 10 inches broad. The wood is said to be extremely hard, close, and durable.

4. Dovyalis Zizyphoides. E. Meyer. (Flacourtia rhamnoides. Burch.)—*Branches* white, armed with patent, axillary, horizontal spines. *Leaves* on short stalks, alternate, membranaceous, ovate, entire or slightly dentate, veined, triplinerved at base, smooth. *Flowers* dioecious, axillary; male ones fascicled, female ones solitary. *Perianth* 5 fid, tomentose. *Corolla* none; *stamens* 18-20; *styles* 2; *stigmas* truncate. *Fruit* an ovate berry.

This tree attains a height of from 20 to 30, and a breadth of 2 or 3 feet. *Stem* knotty; *bark* greyish-white. *Wood* citron-yellow, close, hard, and chiefly used for yokes, various wagonwork, and rural implements.

The fruit (*Zuurbesje, Kaffer-pruim*), which has a sourish taste, is eaten by the natives, and brandy and vinegar have been distilled from it.

Common in the woods of the Krakakamma, Tzitsikamma, Olifantshoek, and Van Stadens Mountains. Fl. May—June.

5. Kiggelaria Africana. Lin. (*Speckhout; Kersenhout.*)—*Branches* erect; *twigs* purplish, more or less downy. *Leaves* stalked, lanceolate, unequally serrate, smooth above, downy beneath. *Flowers* white, dioecious; male ones small, racemose, nodding; female ones much

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larger, solitary, stalked, erect, axillary. *Calyx* 5 cleft; *stamens* 10-12; *anthers* hairy, perforated at top; *petals* 5, glanduliferous at base; *styles* 5. *Capsule* globose, scabrid, one-celled, many-seeded.

Height of trunk 20 to 25 feet; diameter one foot and a half to two feet. *Wood* soft, spongy. Used occasionally for spars, rafters, rural implements, and fuel.

Common about Cape Town, Wynberg, &c. Fl. November.

TILIACEÆ. Juss.

6. Grewia Occidentalis. Lin. (*Kruysbesje.*)—Shrubby. *Leaves* alternate, ovate, blunt, smooth; *peduncles* solitary, one-flowered. *Calyx* 5 cleft, deciduous, coloured within; *stamens* numerous; *anthers* roundish; *style* 1; *stigma* 4 lobed. *Petals* 5, bright-purple. *Drupe* 4 lobed, fleshy; *lobes* 2 locular, 2 seeded.

This shrub climbs 10 to 12 feet high, but is little more than 3 inches in diameter. *Stem* and *branches* very like those of the small leaved Elm. *Bark* smooth. The wood is very tough and bends extremely well. Being of fine grain, the larger pieces answer for turner's work. From this species, and from the *Grewia Obtusifolia.* Willd & G. *flava* DC., the Bushmen make their bows. The fruit are eaten by them and other savages.

Common near Cape Town and in many parts of the Colony. Fl. January—February.

SAPINDACEÆ. Juss.

7. Ptæroxylon Utile. Eckl. & Z. *(Nieshout; Sneezewood.) Stem* smooth; *branches* nodous. *Leaves* imparipinnate; *leaflets* in 6-7 pairs, coriaceous, entire, irregularly sided. *Flowers* dicœcious, axillary, racemose, placed at the extremities of the branches, and between the leaves. *Calyx* 4 parted, *petals* 4, *stamens* 4; filaments smooth. *Styles* 2, *stigmas* capitate. *Capsule* 2 celled, 2 seeded, compressed; *seeds* winged.

A tree, from 20 to 30 feet in height, and 2-4 feet in diameter. The leaves have some resemblance to those of *Acer pseudoplatanus.* The wood is handsome, takes a fine polish, is strong, durable, and somewhat like Mahogany. It is used for various kinds of furniture and agricultural utensils. Being little affected by moisture, it serves as a desirable material in the construction of bridges and mills. From the

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fact of its producing violent sneezing, when sawn or otherwise worked at, it has received the name of *Sneeze-wood*. It is also said to ignite readily, even in its green state.

Common in the forests of the Eastern districts. Fl. October.

8. PAPPEA CAPENSIS. ECKL. & ZEYH. (*wilde Pruime; wild Plum-tree*), *Branches* and *twigs* spreading. *Leaves* alternate, ovate, oblong, unequal at base, smooth, blunt, coriaceous, veiny, slightly rolled back at the margin. *Calyx* 5 fid; *petals* 4-6, bearded inside. *Stamens* 8-10; *filaments* shaggy; *style* 1; *stigma* sub-trifid. *Flowers* small, racemose with separate sexes by abortion. *Fruit* 3 capsular, drupaceous, fleshy, globose, downy.

A moderate sized tree. Height 15 to 20, diameter 1, to 1½ feet, *Bark*, greyish-white, cracked. *Wood* handsome, hard and tough, and used for furniture, yokes, poles, ploughs, etc. *Fruit* red, of a pleasant taste; called *wild plum* by the Colonists, and *t'Kaamsbesje* by the Natives. It furnishes a vinous beverage and very good vinegar, and its kernel contains an oil, which, though eatable, is somewhat purgative.

The presence of this tree is considered as a criterion of excellent pasturage for wool-bearing flocks.

Abundant in some parts of the eastern districts of the Colony, and in Caffraria. Fl. November.

MELIACEÆ. JUSS.

9. ECKEBERGIA CAPENSIS. SPARRM. *(Essenhout; Cape Ash.) Branches* alternate, scarred, smooth, spreading. *Leaves* placed at the tops of the branches, aggregate, imparipinnate; *leaflets* in 4-5 pairs, oblong, entire, glabrous, pointed at both ends, unequally sided. *Calyx* 4 fid; *petals* 4; *stamens* very short, with *anthers* sessile, within the tube; *stigma* capitate. *Flowers* axillary and terminal, paniculate. *Berry* round, 5 seeded.

A lofty tree, 20 to 30 feet, or more, in height; 2 to 3 feet in diameter. *Bark* grey. *Wood* white, tough, and close. Useful timber for beams, planks, spars, carriage-poles, etc., and employed for all kinds of wagon work, and in the manufacture of many implements, tools, &c.

Found in the primeval forests of the George, Uitenhage, Albany and Victoria districts. Fl. August.

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DIOSMEÆ. R. Br.

10. Calodendron Capense. Thbg. (*Wilde Kastanie; wild Chesnut.*) *Branches* and *twigs* divaricating. *Leaves* stalked, opposite, simple, entire, ovate, obtuse, ribbed, crossed at right angles. *Flowers* terminal on short, shaggy, peduncles; paniculated. *Calyx* deciduous 5 cleft; *petals* glanduliferous. *Stamens* 10; *style* 1. *Capsule* 5 angled, 5 celled; *cells* 2 seeded.

Height 20 to 30 feet, diameter 2-3 feet. *Bark* smooth, whitish-grey. *Wood* soft, white, and little used, except for rural utensils, yokes, poles, &c. Its inflorescence somewhat resembles that of the Horse-Chesnut *(Aesculus Hippocastanum)*, and hence its Colonial name. Like most plants belonging to the family of the *Diosmeæ*, the flowers diffuse a very strong, but pleasant odour.

— This fine tree grows in the forests of the Swellendam, George, Uitenhage and Albany districts. Fl. December—January.

XANTHOXYLEÆ. Nees ab. E.

11. Fagarastrum Capense. Don. (Fagara Thbg.) (*Knobhout, Knopjes-doorn; Paardepram.*)—*Branches* compressed, flexuose wrinkled, prickly. *Prickles* flat, sharp pointed. *Leaves* alternate, impari-pinnate; *leaflets* oblique, ovate, blunt, sessile, smooth, slightly crenate, sprinkled with glandular dots. *Calyx* 4 cleft; *petals* 4; *stamens* 6-8 alternately shortened; *filaments* broad at base; *anthers* large; *style* 3 lobed. *Flowers* white, small, paniculated. *Capsule* 2 valved, one seeded, dotted; *seeds* black, shining.

The bark of the trunk of this little tree, is studded with numerous large, conical, nipple-like protuberances, which afford a very curious aspect. Height from 8 to 10 feet; diameter from 10 inches to one foot and a half. *Wood* yellow, hard and close, and used in the manufacture of many kinds of domestic utensils, yokes, axles, tools, &c.

The fruit is known to the Colonists as the *wild Cardamom*, and, on account of its aromatic qualities, prescribed for flatulency and paralysis.

Found in the bush near Mossel Bay, in the forests of the district of George, and also in those of Uitenhage and Albany. Fl. July—August.

12. Asaphes Undulata. D. C. (Boscia Thbg.) *(Wit Yzerhout; white Ironwood.)*—*Branches* rugose,

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spreading. *Leaves* alternate, stalked, trifoliate; *leaflets* sessile, elliptical, entire, blunt or pointed, veined, wavy, perfectly smooth. *Flowers* unisexual, small, terminal, panicled. *Calyx* short 4 fid; *corolla* 4 petalous; *petals* narrow, linear; *stamens* 4, shorter than the petals; *styles* 3; *stigmas* 3 persistent; *capsule* dotted, 4 celled, 4 seeded.

Height 20 feet; diameter 2 feet and more. *Bark* thin, whitish grey, smooth. *Wood* white, hard, very tough. Used chiefly for ploughs, axles, or other wagonwork. Grows in the primeval woods of the Tzitsikamma and Krakakamma. Fl. October—November.

OCHNACEÆ. D. C.

13. Ochna Arborea. Burch. *(Roodhout; Redwood.)*—*Branches* smooth, spreading. *Leaves* alternate, glossy, penninerved, oval, slightly serrate. *Flowers* subracemose, or often solitary. *Calyx* 5 parted, deciduous; *petals* 5, yellow; *stamens* numerous, shorter than the petals; *filaments* slender; *anthers* linear, opening by pores; *style* 5-10 fid. *Berry* one-celled, one seeded.

Height of stem 20 to 30; diameter 1½ to 2 feet. *Bark* reddish-brown, smooth. *Wood* of a red tint, hard, heavy, and tough. Well suited for all kinds of furniture, but chiefly used for wagon poles, tools, triggers, axe-handles, &c.

In the forests of Oliphant's Hoek, Salem, and Adow (Uitenhage). Fl. September—October.

CELASTRINEÆ. R. Br.

14. Celastrus Acuminatus. Lin. *(Zybast; Silk-bark.)*—*Branches* unarmed, *twigs* angular compressed. *Leaves* stalked, oblong, lanceolate, taper-pointed, serrate, veiny, smooth. *Flowers* 2—4, small, nodding, axillary on short pedicels.

A forest tree. Height 12 to 15 feet; diameter 7 to 12 inches. *Bark* thin, whitish-grey, not thorny. Has this peculiarity along with the leaves, that when broken, they show numerous fine white, silk-like threads, and hence the name of *Zybast*, or *Silk-bark*. *Wood* of a fine grain, heavy, and hard. When polished it displays beautiful shades. To the joiner it furnishes a splendid material for fancy work; by the turner it will be found very serviceable for wooden screws, &c., as also

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by the manufacturer of musical instruments. In the colony it has hitherto chiefly been used by wheelwrights. This tree grows best in rocky situations beneath other trees, and is found in many parts of the colony, even in the very vicinity of Cape Town, at Kirstenbosch, on the eastern side of Table Mountain. It is harder and tougher than the European Yoke-elm. Fl. February, March.

15. CELASTRUS RHOMBIFOLIUS. ECKL. & Z. (*Pendoorn.*)—*Branches* armed with strong, sharp, horizontal spines. *Leaves* rhomboid, attenuate at base, blunt, leathery, serrato-crenate, smooth. *Flowers* small, axillary, cymose.

Height from 6 to 8 feet; diameter 4 to 5 inches. *Bark* white, very thin. *Wood* hard, yellow, close, heavy, like box-tree. Useful to turners and manufacturers of musical instruments, particularly in the making of flutes, clarionets, &c.

Not uncommon on shady spots in the ravines on the east side of Table Mountain and Devil's Head. Fl. January—February.

16. PTEROCELASTRUS TYPICUS. MEISSN. (*Spekboom.*)—*Branches* erect, rough. *Leaves* crowded, oblong, elliptical, blunt, unequally sided, leathery, entire, or sometimes emarginate. *Flowers* cymose, axillary. *Capsule* cartilaginous, 3-valved, 3-winged.

Stem 8 to 10 feet high; 5 to 10 inches in diameter. *Wood* soft, light. Used for charcoal.

Common on the sides of Table Mountain and elsewhere. Fl. October.

17. PTEROCELASTRUS ROSTRATUS. MEISSN. (*Witpeer.*)—*Branches* and *twigs* erect, purplish, angular, spreading. *Leaves* stalked, alternate, oblong, obtuse, entire, smooth. *Flowers* white, paniculated. *Panicles* axillary, dichotomous, many-flowered. *Capsule* 3-valved 4—6 winged.

Height from 15 to 20; diameter from one to two feet. *Bark* whitish-grey. *Wood* heavy, strong, greatly resembling pear or apple tree. By the colonists it is generally used for wagonwork, and particularly for fellies.

Grows chiefly in the forests of the Swellendam and Uitenhage districts, but is also found on elevated rocky places in the woods on the eastern side of Table Mountain. Fl. September—October.

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18. HARTOGIA CAPENSIS. THBG. (*Smalblad, Lepelhout; Ladlewood.*)—*Branches* decussate, patent; *twigs* slender, erect. *Leaves* opposite, oblong, coriaceous, crenato-serrate, blunt, emarginate, smooth. *Flowers* small, axillary, paniculated, nodding. *Drupe* juiceless, ovate, 2-celled, 2-seeded.

Height from 12 to 15; diameter from one to 1½ feet. *Bark* thin, greyish-white, more or less wrinkled. *Wood* hard, fine grained, close and tough. When polished it surpasses the finest mahogany in colour as well as in texture. It is adapted for all kinds of superior furniture, and invaluable to the cabinetmaker for veneering. Turners also and instrument-makers will find it well adapted for the manufacture of the articles of their trade. In the interior it serves for the construction of wagons and rural utensils.

This tree is found in the woods of the districts of Swellendam and Caledon, where it is known by the name of Lepelhout (Ladlewood); and in the bushy ravines on the eastern side of Table Mountain. Fl. January—February.

19. ELÆODENDRON CROCEUM. D. C. (Ilex crocea. Thbg. Crocoxylon Excelsum Eckl. & Z.) (*Saffraanhout; Saffronwood.*)—*Branches* much spreading. *Leaves* opposite, stalked, leathery, rigid, veined, smooth, prickly at the margins. *Flowers* small, paniculated, axillary. *Drupe* juiceless, 4-celled.

Lofty, 20 to 40 feet high, and 2 to 4 feet in diameter. *Bark* whitish, covered all over with a resinous crust of a *gamboge yellow* colour, which makes this tree easily known from all others, and which led probably to its vernacular name of *Saffronwood.* This wood, which is fine grained, hard, close, and tough, is very useful to the builder in the shape of beams and planks, and to the cabinet-maker serves extremely well for tables, chairs, wardrobes, and for all kinds of furniture. Butter casks are likewise made of it, and wheelwrights use it for fellies and general wagonwork. The bark also is good for tanning and dying.

In the aboriginal forests of the Knysna, Krakakamma, Kat River, and in various parts of Caffraria. Fl. June—July.

20. CASSINE MAUROCENIA. LIN.—*Branches* rigid; *twigs* quandrangular, purplish. *Leaves* sessile, opposite, alternate, obovate, entire, coriaceous, blunt, smooth. *Flowers* small, whitish; *flower stalks* axillary, short, almost solitary: *Drupe* juiceless, 3-celled, 3-seeded.

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Shrubby. Usual height of stem 3 feet; diameter 3 to 4 inches. *Bark* grey, very craggy. *Wood* fine, pretty hard, and tough. It looks well when polished, being yellow with brownish flames. It is very fit for the manufacture of musical instruments.

In the bushy ravines of Table Mountain and elsewhere. Fl. December.

21. CASSINE COLPOON. THBG. (*Lepelhout.*)—***Branches*** and *twigs* angular, erect, patent, purplish. *Leaves* opposite, stalked, ovate, toothed at the margin, entire at base; obtuse, rigid, smooth. *Flowers* small, white. *Peduncles* axillary, paniculate. *Panicles* dichotomous or trichotomous. *Drupe* nearly round, purple.

Height from 8 to 10 feet; diameter 8 to 12 inches. *Bark* grey, smooth. *Wood* hard, tough, and, when varnished, extremely handsome. It furnishes the cabinetmaker with a superior material for all kinds of fancy work, and has proved itself useful to the wheelwright.

This tree grows in the forests along the eastern side of Table and Devil's Mountain, in Hout Bay, also in the district of Clanwilliam and other parts of the colony. Fl. April—May.

RHAMNEÆ. R. BR.

22. RHAMNUS CELTIFOLIA. THBG. (*Camdeboo; Stinkhout.*)—***Branches*** unarmed, scabrid, divaricating. *Leaves* on short stalks, alternate, ovate, bluntly acuminate, serrate, veined, coriaceous, smooth. *Flowers* pedicellate, solitary, axillary. *Corolla* none. *Calyx* 5 fid; *stamens* 5; *style* 1; *stigmas* 3. *Berry* globose, 3-seeded.

Height 20; diameter 2 feet and more. *Bark* grey, even. *Wood* yellowish-white, tough. Used for planks, yokes, triggers. axehandles, laths, fences, and cooper's work.

Grows in the primeval forests of the Uitenhage and Victoria districts. Fl. September.

23. SCUTIA CAPENSIS. BROGN. (*Katdoorn.*) ***Branches*** decussate, divaricating, erect, prickly; *prickles* solitary, recurved. *Leaves* opposite, stalked, ovate, blunt, emarginate, smooth. *Flowers* umbellate, axillary. *Berry* roundish, 2-celled.

Habit of growth usually shrubby; branches armed with hooked thorns. Height about 4 or 5 feet; diameter from 6 to 8 inches. ***Bark***

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whitish grey, wrinkled. *Wood* fine grained and strong, light-brown, looks well when varnished. Useful to turners.

Common in the woods of Swellendam, Uitenhage, and Albany. Fl. December, January.

TEREBINTHACEÆ. JUSS.

24. HEERIA ARGENTEA. MEISSN. (Roemeria Thbg. Rhus Thunbergii Hook.) *Kliphout; Klipesse.*)—*Branches* rugose, erect. *Leaves* stalked, alternate, crowded, leathery, ovate, emarginate, entire, penninerved, tomentose beneath. *Flowers* small, white, terminal, panicled or racemose. *Fruit* almost dry, one-celled, one-seeded.

Height 12 to 15 feet; diameter 3 to 4 feet. *Bark* rough, craggy. *Wood* resinous, fine grained, hard, close, heavy. Very handsome when polished, and marbled like the maple tree. Valuable in the manufacture of fancy furniture, work boxes, sewing tables, &c., and useful to the turner and maker of musical instruments.

This tree grows in rocky situations in the districts of Stellenbosch, Worcester, and Clanwilliam. Fl. February.

25. RHUS VIMINALIS VAHL. (*Karreehout.*) *Branches* smooth, slender. *Leaves* ternate; *leaflets* linear-lanceolate, mucronate, entire, glabrous, attenuate at both ends. *Flowers* small, panicled, axillary. *Drupe* rather dry, one-celled, one seeded.

This little tree, which in its growth and foliage in some measure resembles the *Willow*, grows chiefly on the banks of rivers and rivulets. It attains a height of from 10 to 14 feet, and sometimes measures 8 to 10 inches in breadth. The *bark* is grey and smooth; the *wood* reddish-brown, hard, and very tough. Its thicker and longer branches are used as spars in thatching houses, and also for wagon tents, as they bend easily without breaking; the younger twigs for bows. The *Karreewood* has the advantage, that it is not infested by noxious insects.

Common on rivers and watercourses in many parts of the Eastern districts. Fl. July.

26. RHUS LÆVIGATA. LIN. (*Taaibosch.*)—*Branches* purple, erect. *Leaves* ternate; *leaflets* sessile, ovate, pointed, ribbed, perfectly smooth. *Flowers* small, panicled. *Panicles* terminal, slender.

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Height 4 to 5 feet; diameter from 8 to 10 inches. *Bark* thin, rough. *Wood* hard, tough, reddish, sometimes called *Essenhout* (*Ash-wood*), in the Western districts, and *Bosganna* by the natives of the East. Used for wagonwork of various kinds, and may be employed with advantage by the turner.

Grows in stony ground, nearly all over the colony. Fl. September, October.

27. RHUS. TOMENTOSA. LIN. (*Taaibosch.*)—*Branches* and *twigs* erect, tomentose. *Leaves* ternate; *leaflets* rhomboid, angular, acute, bluntly toothed, costate, downy on the upper, and woolly on the lower surface. *Flowers* panicled, terminal, tomentose.

Grows commonly shrubby. Height of trunk 2 to 3 feet; diameter 3 to 4 inches. *Bark* of root and branches used for tanning purposes. *Wood* hard and tough.

Common on the slopes of the mountains in the Cape and Swellendam districts. Fl. August—September.

28. RHUS LUCIDA. LIN. (*Taaibosch.*)—*Branches* spreading. *Leaves* ternate; *leaflets* obovate, wedge-shaped, entire, blunt, emarginate, glossy. *Flowers* panicled, axillary and terminal.

Growth, height, properties and technical uses like those of the preceding species.

On hills and mountains, amongst other shrubs, in the Cape and Swellendam districts. Fl. August—September.

LEGUMINOSÆ. JUSS.

29. VIRGILIA CAPENSIS. LAMK. (*Keurboom.*)—*Branches* erect, tomentose. *Leaves* stalked, impari-pinnate; *pinnæ* many-yoked, on short petioles, opposite, lanceolate, acute, entire, silky. *Flowers* papilionaceous, racemose, axillary, or terminal; *pedicels* shaggy. *Calyx* 5 fid., tomentose; *stamens* free. *Corolla* smooth, flesh-coloured, sweet-scented. *Legumes* compressed, oblong, 2-valved, many-seeded, tomentose, rusty.

Height 15 to 20; diameter 1½ to 2 feet. *Bark* black craggy. *Wood* rather light and soft. Looks well when polished, but is subject to worm-eating. It is occasionally used for yokes, rafters, spars, fuel, &c.

This handsome tree, although originally a native of the Eastern provinces of the Colony, is now to be found in moist and shady spots,

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and especially in mountain ravines in most of the Western districts, whence it has found its way even into gardens. Fl. April, May.

30. Erythrina Caffra. Thbg. (*Kafferboom; Kafir tree.*)—*Stem* erect, smooth, prickly; *prickles* solitary, purplish. *Branches* alternate, spreading. *Leaves* ternate, unarmed, stalked; *leaflets* ovate, broad, pointed, glabrous, entire. *Flowers* papilionaceous, racemose, nodding, scarlet. *Calyx* truncate, 2 lobed, tomentose, rusty. *Vexillum* very large. *Stamens* monadelphous. *Legume* oblong, 2 valved, many-seeded. *Seeds* scarlet with a black spot.

This giant of the forests of Olifantshoek, Albany, and Caffraria, grows 50 to 60 feet high, and 3 to 4 in diameter. Its *bark* is grey and its wood soft and very light. However, it has been turned to advantage by the inhabitants, for, from the tall hollowed trunk they have constructed canoes, made troughs, and employed the wood instead of cork in the construction of their fishing nets. The wood is used likewise for making shingles, which, when tarred, are considered to be very durable and to make very good roofing. Fl. September.

Acacia Horrida. Willd. (*Doornboom*).—*Stem* and *Branches* smooth, but armed with large, white, spinous stipules. *Leaves* bipinnate; *pinnæ* 2-3 yoked; *pinnules* many-yoked, oblong, blunt. *Leafstalks* glandulous at base and apex. *Flowers* stalked, axillary, globose, polygamous, yellow, scented.

Height 20 to 25; diameter 1 to 1½ feet. *Bark* dark grey, contains a large portion of the tanning principle, imparting a reddish dye to leather. *Wood* hard and tough, extensively employed in the interior for building purposes; looks well when varnished, and therefore adapted for all kinds of common furniture. The colonists generally place the logs for some time in water before using them, in order to render the wood more durable. It furnishes a very good material for wheels, poles and yokes, and many rural implements, and answers well for turner's work.

The *Gummi Acaciæ*, which exudes spontaneously from the bark both of the trunk and branches, is well known as an article of commerce.

The *Thorn-tree* may be said to be the most common tree, met with in the lonely wastes of South Africa. There it inhabits the borders of every stream, and points out at a far distance to the exhausted traveller the cherished spot, where he may quench his burning thirst, and screen himself from the scorching rays of an African sun. Fl. January—February.

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32. SCHOTIA TAMARINDIFOLIA. AFZEL. (*Hottentots Boerboon.*)—*Branches* rigid, straitened. *Leaves* abruptly pinnate; *pinnulæ* many-yoked, elliptic, coriaceous, sessile, unequal at base, mucronate, entire, perfectly smooth. *Flowers* paniculated, terminal, bright-crimson. *Calyx* 4 fid, deciduous; *petals* 5, *stamens* 10-12, free, exserted and of unequal length. *Legumes* stalked, large, broad, flattened, leathery, oblong, edged. *Seeds* 1-2; *umbilicus* naked.

Height of trunk 8 to 12; diameter 1 to 1½ feet. *Bark* brown, rugged. *Wood* reddish-brown, hard, tough, durable. Used chiefly for yokes, fellies, triggers or fuel. The *beans* are eaten by the Natives.

This handsome little tree, grows abundantly in the woods of Uitenhage and Albany. Fl. January—February.

33. SCHOTIA LATIFOLIA. JACQ. (*Bosch-Boerboon.*)—*Branches* spreading. *Leaves* impari-pinnate; *pinnæ* 2-4 yoked, sessile, obovate, blunt, mucronate, leathery, smooth. *Flowers* paniculated, terminal or lateral, drooping, pinkish. *Stamens* monadelphous. *Legume* much like that of the preceding species. *Seeds* surrounded at base by a fleshy, yellow *arillus*.

Grows from 20 to 30 feet high, and from 3 to 4 in diameter. *Bark* brownish-grey, smooth. *Wood* white, hard, tough and heavy, but does not appear to be much used, save for triggers, posts, enclosures, &c. The young *beans* are eaten by Hottentots and Kafirs.

Very common in the forests of Uitenhage and Albany. Fl. January.

OLINIEÆ. W. ARNOTT.

34. OLINIA CAPENSIS. KLOTZSCH. (*Hardpeer.*)—*Branches* and *twigs* patent, smooth, angular. *Leaves* opposite, decussate, leathery, oval-shaped, wavy, glabrous, entire, slightly pointed, penni-nerved, unequally sided, green above, pale beneath. *Calyx* 5 parted. *Flowers* white, terminal, cymose. *Stamens* 5, style 1; *petals* spathulate. *Drupe* dry, 3-4 seeded.

Height of stem 14-16 feet, diameter 10-12 inches. *Bark* greyish-white, very ragged. *Wood* hard, tough, very compact and heavy. It is a fit material in the manufacture of musical instruments, picture-frames, and general fancy work. To wagon-makers it is of great

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utility for axles, poles, &c., and in many respects, it resembles the European Birch.

Grows in the woods of the Cape, Swellendam and Uitenhage districts. Fl. July—August.

35. Olinia Cymosa. Thbg.—*Branches* 4 angular, very straight. *Leaves* stalked opposite, obovate, emarginate or blunt with a point, coriaceous, entire, ribbed, smooth. *Petioles* short, depressed. *Flowers* white, cymose, axillary.

Height of stem 4 to 5 feet; diameter 1½ feet. *Bark* whitish-grey, cracked. *Wood* hard, close-grained, heavy, well adapted for turner's work.

Delights in rocky spots, and is common on the east side of Table mountain, and in similar localities of the Western division of the Colony. Fl. July—August.

CUNONIACEÆ. R. Br.

36. Cunonia Capensis. Lin. (*Rood Els.*)—*Branches* rough, patent. *Leaves* stalked, impari-pinnate; *pinnæ* 4-5 yoked, petiolate, opposite, oblong, acute, sawed, leathery, penninerved, smooth. *Stipules* large, ovate; *petioles* compressed. *Flowers* white, racemose, axillary, many-flowered. *Calyx* 5 parted; *petals* 5; *stamens* 10, *styles* 2, longer than the corolla. *Capsule* taper-pointed, 2-celled, many seeded.

Height 15 to 25 feet; breadth 1½ to 2. *Bark* black, wrinkled. *Wood* tough, close, somewhat like the *Lime-tree*, and much in request. It is handsome when polished, and the planks are sought after, both by cabinetmakers and wheelwrights. It is also useful to turners, and well adapted for screws. As this wood suffers but little from moisture, it may be of service in the construction of mills.

Common in the forests throughout the whole Colony. Fl. May—June.

37. Weinmannia Trifoliata. Lin. (*Wit-Els.*)—*Branches* erect, purplish. *Leaves* ternate, stalked, opposite; *leaflets* elliptic, serrate, veined, smooth, green above, pale beneath. *Flowers* panicled, small, white. *Panicles* axillary, compound; *peduncles* shaggy. *Calyx* 4 cleft, *petals* 4 trifid; *filaments* 8, *styles* 2. *Capsule* ovate, 2-celled.

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Height from 20 to 30 feet; diameter from 3 to 4. *Bark* whitish-grey, rather smooth. *Wood* white, much lighter than that of the preceding species, from which also it differs in colour. It furnishes a good material for common furniture, drawers, boxes, picture-frames, &c., looks well when polished, and is also used for various wagon work.

This stately tree is to be met with in the forests of the Swellendam, Worcester, George and Uitenhage districts. Fl. January.

ARALIACEÆ. Juss.

38. Curtisia Faginea. Ait. (*Hassagay-hout; Hassagay-wood.*)—*Branches* decussate, erect; *twigs* purplish, tomentose. *Leaves* opposite, stalked, oblong, acuminate, unequally toothed, glabrous, veined. *Petioles* and *veins* clothed with a dense rusty shag. *Flowers* small, numerous, red, paniculate. *Panicles* trichotomous, shaggy, terminal. *Calyx* 4 parted; *petals* 4; *stamens* 4; *style* 1; *stigmas* 4-5. *Berry* round, fleshy, yellowish, 4-5 seeded.

Height from 20 to 40 feet, if allowed to grow, for the tree is generally felled before it has attained its full size, and commonly measures from 15 to 20 feet high, and from 2 to 3 in circumference. The *bark* is thin, black and almost smooth. The *wood*, which is highly prized within the Colony, is solid, extremely tough, heavy, close-grained, very durable, and resembles plain Mahogany. It answers well for all kinds of superior furniture, tools, &c., but is truly invaluable and not to be surpassed by any other wood, in the construction of wagons, particularly in this Country, where the natural difficulties of the roads, the great distances to go, and the excessive heat of the climate, require strong, and substantially-built vehicles for travelling.

The tree grows in the primeval forests throughout the whole Colony, and also in Kafirland. Fl. January—February.

HAMAMELIDEÆ. R. Br.

39. Trichocladus Crinitus. Pers. (*Onderbosch.*)—*Branches* smooth, greyish-white, spreading. *Leaves* opposite, stalked, ovate, acuminate, veiny, entire, glabrous. *Twigs*, *petioles*, *calyces*, and *ribs* of the leaves densely clothed with brown stellate shaggy hairs. *Flowers* dicœcious, terminal and axillary, clustered together in one common receptacle. *Capitula* stalked. *Calyx* 5 lobed; *petals* 5 epigynous, linear involute; *stamens*

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5 ; *styles* 2. *Capsule* hairy, 2 locular, 5-valved ; cells 1, 2-seeded.

The branches and twigs of this shrub are used at the Cape on account of their toughness and elasticity. They bend, but never break, and serve as hoops, and for the manufacture of baskets.

RUBIACEÆ. Juss.

40. Burchellia Capensis. D. C. (*Buffeldoorn ; Wilde Granaten.*)—*Branches* opposite, erect. *Leaves* on short stalks, ovate, acute, subcordate, downy, rigid, entire. *Flowers* of a deep orange hue, capitate, terminal, sessile on a villous receptacle, with minute bracts. *Calyx* tubular, deeply 5 parted ; *corolla* funnel-shaped ; tube hispid. *Anthers* 5, pointed, almost sessile. *Style* 1 filiform ; *stigma* club-shaped, 2 fid. *Berry* 2 locular, turbinato-globose. *Seeds* black, angular.

A small tree 12 to 14 feet high, but sometimes from 1 to 2 in diameter. *Bark* greyish-brown. *Wood* very hard and close, and chiefly used for agricultural implements.

Common in the forests of Swellendam, George, and Uitenhage. Fl. October—November.

41. Gardenia Thunbergia. Lin. (*Wilde Katjepiering ; Buffelsbal.*)—*Branches* unarmed, erect, much divided. *Leaves* oblong, attenuate at both ends, stalked, verticillate, entire, veined, glabrous. *Flowers* terminal, solitary, white, scented. *Calyces* tubular, foliaceous, hispid, cleft at one side with leaflike appendages. *Corolla* tubular, salver-shaped ; *petals* 8, obtuse. *Anthers* 7—9 ; *style* club-shaped, shaggy. *Fruit* baccate ovate, smooth, white, imperfectly 5 celled, many-seeded, very hard, almost woody.

Height of trunk from 8 to 10 feet ; breadth from 10 to 12 inches. *Bark* smooth, greyish-white. *Wood* hard, heavy, and strong, and used for making tools, clubs, kieries, yokes, axles, fellies, ploughs, &c.

In the forests of the Krakakamma and Oliphant's Hoek (Uitenhage). Fl. January—February.

42. Gardenia Rothmannia. L. (*Zwarthout.*)—*Branches* and *twigs* unarmed, brown, angular, rough, erect. *Leaves* on very short stalks, opposite, oblong,

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acute, veined, entire, smooth. *Flowers* terminal, solitary, sessile, sweet-scented. *Calyces* cylindrical, ribbed, hairy within, 5 cleft, its *segments* filiform, sharp-pointed. *Corolla* bell-shaped, 5 parted; *petals* 5, pointed, reflexed, buff, sprinkled with purplish dots. *Anthers* 5, *style* one, thickened at top. *Fruit* ovate, fleshy, costate, angular, smooth, 2 valved, 2 celled, many-seeded, black.

Height of stem from 15—20; diameter from 1—1½ feet. *Bark*, grey, smooth. *Wood* very hard, strong, and tough. Used chiefly for tools, axles, fellies, and other wagonwork.

This fine tree is to be met with in the aboriginal woods of the George and Uitenhage districts. Fl. January—February.

43. Plectronia Ventosa. Lin. *(Schapendrolletjes.)*—*Branches* brachiate, patent, spiny; *spines* horizontal; *twigs* quadrangular. *Leaves* stalked, opposite, elliptic, smooth, almost leathery, entire, pale on the lower surface. *Flowers* corymbose, axillary, greenish. *Calyx* tubular, 5 toothed. *Corolla* funnel-shaped, 5 parted, throat hairy. *Stamens* 5, filaments very short; *stigma* capitate. *Drupe* fleshy, didymous, compressed, excised, 2 locular; cells one-seeded.

Height from 10 to 15 feet; diameter from 6 to 10 inches. *Bark* whitish, smooth. *Wood* hard, close, heavy, and tough; takes varnish well, looks marble-like, and is very handsome. It will suit the joiner for small and fancy furniture, and the wagonmaker for fellies, &c. The *fruit*, though insipid, is eaten by the natives.

Common in mountain ravines and forests throughout a great part of the colony. Fl. October—November.

44. Plectronia Mundtiana. Mihi. (Canthium Mundtianum Cham. & Schltdl.) *(Kloofhout.)*—Similar to the preceding species, but branches more straight, *less spiny*, and spines much shorter. *Leaves* membranaceous, one-coloured, slightly fringed, *petioles* and *middle rib* pubescent on the upper surface; *flowers* and *drupes* smaller.

Shrubby; usual height from 4 to 5 feet; breadth from 4 to 5 inches. *Bark* thin, white, smooth. *Wood* white, but very hard and heavy.

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Useful to turners for screws, tools, &c.; and to manufacturers of musical instruments for various purposes.

This arborescent shrub grows in the ravines on the east side of Table Mountain, and also about Genadendal (Caledon), and Plettenberg's Bay. Fl. November—December.

COMPOSITÆ. Juss.

45. Tarchonanthus Camphoratus. Lin. (*Sirie-hout.*)—*Branches* and *twigs* erect, angular, clothed with white, short down. *Leaves* petiolate, alternate, oblong, blunt, leathery, entire, reticulato-areolate and green on their upper surface; veined, white and tomentose beneath. *Flowers* paniculate. *Panicles* terminal, many headed. *Flower-heads* dioecious; *involucres* scaly; *achænia* woolly.

This arborescent shrub (*wilde Salie; wild Sagea*), grows from 6 to 8 feet high; its diameter is from 5 to 6 inches. *Bark* brownish-grey, much rugged. *Wood* close, heavy; looking handsome when polished, and useful in the manufacture of musical instruments and joiner's fancy work.

The *leaves* when fresh, have a peculiar smell resembling *camphor;* they are chewed by the Mohamedans, smoked by the Hottentots, and employed in the form of infusion or tea, as antispasmodic, tonic, and resolvent.

Common in the Cape, Swellendam and Uitenhage districts. Fl. May—June.

ERICACEÆ. Juss.

46. Philippia Chamissonis. Klotzsch. (*Kabinet-hout*)—*Stem* erect; *branches* short, flexuose. *Leaves* ternate, linear, blunt, small, smooth. *Flowers* terminal, clustered (3—4), nodding. *Calyx* 4 fid; *corolla* globose, 4 parted; *stamens* 8 connate; *stigma* exserted, peltate. *Capsule* 4 angular, 4 locular, 4 celled.

Height of stem from 2 to 3 feet; breadth from 2 to 3 inches. *Bark* brown, glabrous, fibrous, splitting longitudinally. The *wood* which is hard and close-grained, looks well when varnished, and will suit both the cabinetmaker and turner for various kinds of fancy work.

Common in rocky localities on the north side of Table Mountain and elsewhere. Fl. June.

EBENACEÆ. Vent.

47. Royena Lucida. Thbg. (*Zwartbast.*)—*Branches*

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and *twigs* erect. *Leaves* on short stalks, alternate, ovate, entire, glossy, fringed. *Pedicels* and middle-nerv shaggy beneath, the younger leaves silky. *Flowers* axillary, solitary, yellowish. *Calyx* hairy, 5-parted. *Corolla* bell-shaped, 5 fid; *limb* revolute. *Stamens* 10; *styles* 2. Berry 4 celled, globose, leathery, covered by the enlarged *calyx*. *Seeds* 2—4.

Height of stem from 10 to 12 feet; diameter from 6 to 12 inches. *Bark* black, rather smooth. The *wood* which is hard and tough, and of a yellow tint with brownish stripes when polished, is well adapted for furniture, tools, screws, &c., but chiefly used for wagon work.

To be found in the woods of the Cape and Swellendam districts. Fl. August—September.

48. Royena Glabra. Lin.—*Branches* erect, filiform, spreading; *twigs* villose. *Leaves* lanceolate, acute, glabrous, entire. *Flowers* stalked, axillary, white; *stalks* shaggy, 1—5 flowered.

Height from 4 to 5 feet; breadth from 5 to 6 inches. *Bark* thin, grey, smooth. *Wood* light, porous. Little used, except for fuel.

Common on the north side of Table Mountain and similar places. Fl. July.

49. Euclea Racemosa. Lin.—*Branches* erect, rough; *twigs* much divided. *Leaves* almost sessile, oblong, leathery, blunt, entire, veined, revolute. *Flowers* diœcious, racemose, white. *Racemes* stalked, many-flowered, axillary, pendulous. *Calyx* 4 cleft; *corolla* bell-shaped, 4 fid; *stamens* 13—15, connected at base, and hairy at the apices. *Styles* 2. *Berry* one-celled, one-sceded, globose, fleshy.

Usual height 6 feet; diameter from 5 to 6 inches. *Bark* grey, smooth. *Wood* hard, heavy; employed by wheelwrights and turners. Answers very well for wooden screws, but is chiefly used as fuel.

Grows on the west side of Devil's Mountain, in Van Camp's Bay, near Wynberg, and in many other localities. Fl. June.

50. Euclea Undulata. Thbg. (*Guarrihout.*)—*Branches* erect; *twigs* spreading. *Leaves* opposite, obovate, blunt, entire, wavy, coriaceous. *Flowers* racemose, axillary. *Stamens* 10—14.

Height 5 to 6 feet; breadth 5 to 6 inches. *Bark* whitish-grey, rough.

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Wood brown, hard, close-grained, and fit for joiner's fancy work, veneering, &c. The *fruit*, a *red berry*, is well known by the name of *guarri besjes*, and eaten by the inhabitants.

Common in the woods of the Swellendam and Uitenhage districts. Fl. December—January.

SAPOTEÆ. Juss.

51. Sideroxylon Inerme. Lin. (*Melkhout.*)—*Branches* flexuose, erect; *twigs* angular. *Leaves* alternate, stalked, oblong, obtuse, entire, coriaceous, smooth. *Flowers* small, white, fasciculated, axillary. *Calyx* 5 parted; *stamens* 5, opposite the lobes of the corolla; *style* 1. *Corolla* 5 cleft, rotate. *Fruit* globose, baccate; *ovary* 4—5 celled.

Height from 8 to 10 feet; diameter 1½ to 2. *Bark* grey, craggy. milky, inside. *Wood* yellow, very hard, close and durable. Being little affected by damp or moisture, it furnishes one of the best materials for boat-building, mill-work, bridges, &c., and is likewise well suited for ploughs and rural implements. The fruit (*Jackalsbesjes*) are edible.

Common in the Cape, Swellendam, George, and Uitenhage districts. Fl. December—June.

MYRSINEÆ. R. Br.

52. Myrsine Melanophleos. R. Br. (Roemeria Thbg.) (*Beukenhout.*)—*Branches* rugose, spreading. *Leaves* oblongo-lanceolate, petiolate, leathery, entire, obtuse, veined, green above, paler beneath, placed at the extremities of the younger branches. *Flowers* (3-4) small, fasciculate, axillary. *Calyx* 5 fid. *Corolla* 4-5 parted; *anthers* 5; *stigma* 1, capitate. *Drupe* pisiform, one-seeded.

Height from 10 to 15 feet; diameter from 1½ to 2. *Stem* straight. *Bark* grey, warty. *Wood* tough, used chiefly for wagon-work.

To be found in the bushy ravines on the east side of Table Mountain, in the forests of Swellendam, &c. Fl. October.

53. Myrsine (?) Mitis. Spreng. (Sideroxylon mite. Lin.)—*Branches* erect, white; *twigs* angular. *Leaves* alternate, petiolate, oblongo-lanceolate, taper-pointed, veined, entire, leathery, green and glossy above, paler

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beneath. *Petioles* channelled on the upper side. *Flowers* small, axillary, racemose, nodding.

Height from 5 to 6 feet; diameter from 6 to 8 inches. *Bark* white. *Wood* light, soft, rather spongy and little used.

Common in the forests of Swellendam, and those on the east side of Table Mountain. Fl. October.

JASMINACEÆ. Juss.

54. Olea Verrucosa. Link. (Olea Europæa Thbg.) (*Olyvenhout.*) - *Branches* and *twigs* erect, tetragonous, rough with scattered elevated warts. *Leaves* lanceolate, almost sessile, tapering at both extremities, callous at top, leathery, entire, glossy and green above, yellowish beneath. *Flowers* small, white, paniculated. *Panicles* axillary, trichotomous. *Calyx* 4 cleft; *lobes* sharp-pointed. *Stamens* 2; *styles* short 2 fid. *Corolla* rotate, 4 parted. *Drupe* round, pisiform, almost dry, one-seeded.

Height from 8 to 10 feet, breadth from 8 to 12 inches. *Bark* thin, grey, chinky. The *wood*, which is very compact and heavy, looks handsome when polished, and is one of the most useful woods in the Colony. On account of its density and extreme hardness, which even wears out Iron, it is admirably adapted for furniture, tools, wagon-work, and for the construction of mills and other machinery.

This tree much resembles the European Olive, for which it was formerly mistaken by Botanists, and which might be grafted upon it, with probable success. Shaded, stony localities are the places where it grows best, while trees exposed to heat and wind remain dwarfish.

Spread over a great portion of South Africa, from Cape Town to beyond the Orange River. Fl. April—May.

55. Olea Laurifolia. Lamk. (Ol. undulata Jacq.) (*Zwart Yzerhout; black Ironwood.*)—*Branches* spreading, rough, warty. *Leaves* stalked, opposite, oblong, wavy, entire, coriaceous, smooth, pale beneath. *Flowers* white, numerous, scented, small, paniculated. *Panicles* terminal, trichotomously branched. *Anthers* yellow; *stigma* globose. *Drupe* baccate.

Height from 12 to 15 feet; diameter from 1½ to 2. *Bark* grey. *Wood* brownish, hard, close-grained and heavy. Looks well when varnished, and is used by cabinetmakers for all kinds of furniture, btu

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is chiefly employed for axles, poles, and general wagonwork. Tools, also ploughs and agricultural implements are manufactured from it.

Grows abundantly in most of the forests of the western parts of the colony. Fl. May—June.

55. Olea Capensis. Lin. (*Yzerhout; Ironwood.*) —*Branches* rough, quadrangular, erect. *Leaves* stalked, opposite, oval, acute, entire, leathery, smooth. *Flowers* crowded, small, paniculated. *Panicles* trichotomous, terminal. *Drupes* ellipsoidal, rugose.

Usual height from 6 to 8 feet, breadth from 6 to 10 inches. *Bark* white, smooth. *Wood* white, compact and heavy. Well suited for wagonwork of all kinds, and more particularly for poles and the construction of wheels.

Common in thickets of many parts of the colony. Fl. January, February.

ASCLEPIADEÆ. R. Br.

57. Secamone Thunbergii. E. Meyer. (Periploca Secamone Thbg.) (*Melktouw.*)—*Stem* twining. *Branches* alternate, opposite, spreading. *Leaves* stalked, oblong, opposite, obtuse or bluntly pointed, entire, ribbed, smooth, revolute. *Flowers* cymose, white, minute. *Cymes* axillary, dichotomous. *Pedicels* downy, rufous. *Calyx* 5 parted, *coronet* 5 scaled. *Corolla* rotate, 5 fid, villous within. *Follicles* brachiate, acute, glabrous. *Seeds* hairy.

This shrub derives its vernacular name from the milky juice which oozes from it when wounded. The stem, which like that of the wild vine, and other twining shrubs, climbs to the very tops of the tallest forest-trees, serves the baboons instead of ropes, to swing themselves from tree to tree, when in search of food, or in escaping from their enemies (*Baviaanstouw; Baboonsrope*). *Bark* grey, warty. *Wood* white, hard, and tough, but although the stem often attains a considerable length, its thickness rarely exceeds one inch and a half. The natives use these twigs as we do those of the willow.

Common in the primeval forests of the Colony. Fl. October—November.

APOCYNEÆ. Juss.

58. Gonioma Kamassi. E. Meyer. (Tabernæmontana Eckl.) (*Kamassie-Hout.*)—*Branches* erect, whorled. *Leaves* opposite or more frequently ternate,

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oblongo-lanceolate, entire, coriaceous, ribbed, taper-pointed, dark green and glossy above, paler beneath. *Flowers* small, cymose, leathery, yellowish, sweet-scented. *Cymes* terminal, many-flowered. *Calyx* 5 cleft; lobes blunt. *Filaments* 5, short; *anthers* inclosed; *style* 1. *Corolla* salver-shaped; tube hairy within, narrowed at the throat. *Follicles* 2, roundish, patent. *Seeds* pendulous, surrounded with an oblong netted wing.

Trunk slender, straight 16 to 20 feet high, and from 1 to 1½ foot broad. *Bark* thin, yellowish-grey. *Wood* yellow, with whitish flames, very hard, tough, close-grained, and one of the finest and heaviest in the Colony. It serves the Cabinetmaker for furniture and veneering, but is particularly adapted for the manufacture of planes and carpenter's tools. It is useful also for poles, yokes, ploughs, &c.

This tree, whose flowers fill the surrounding atmosphere with their delightful smell, is pretty common in the aboriginal woods of the Krakakamma and Addow (Uitenhage). Fl. October.

SCROPHULARIACEÆ. Juss.

59. Halleria Lucida. Lin. (*Witte Olyve.*) Stem trichotomously branched.—*Branches* divaricating. *Leaves* petiolate, opposite, ovate, acuminate, serrate, smooth. *Flowers* stalked, axillary, aggregate, nodding; *peduncles* one flowered. *Calyx* persistent, very short, 3 lobed. *Corolla* irregular, curved, funnel-shaped, purple; *limb* bilabiate. *Stamens* 4, exserted; *stigma* acute. *Berry* globose, smooth.

Usual height of trunk, which is straight, about 6 feet, diameter from 6 to 8 inches. *Bark* very thin, greyish-white, much rent. *Wood* like *red-beech*, but of a finer grain, hard, tough and well adapted for carpenter's work, planes, screws, joiner's benches and tools of every description. It also supplies the wagonmaker with a good article for poles, &c.

This small tree is found both in the Western and Eastern districts. Moisty, shady places are most favourable to its vigorous growth. Fl. June—July.

60. Buddleia Salviæfolia. Lamk. (*Saliehout.*) Much branched.—*Branches* quadrangular; *twigs* erect, switchy. *Leaves* almost sessile, opposite, lanceolate,

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crenate, cordate, acute, veined, rugose, dark green above, and covered beneath with a thick rust-coloured shag, along with the twigs, calyces and flowers. *Flowers* clustered, terminal, numerous, paniculated; *panicles* ovato-pyramidate. *Calyx* bell-shaped, 4 parted. *Corolla* regular, funnel-shaped, 4 fid, yellow. *Stamens* 4; *style* simple. *Capsule* 2 valved, many-seeded.

Height 12 to 15 feet; diameter 8 to 10 inches. *Wood* hard, tough, heavy, and well suited for wagon-work, ramrods, yokes and rural utensils of every kind. Mr. HARTMAN, M.L.A., an old, experienced resident in the Eastern Province, and an undoubted authority in frontier matters, informs me, that it is this tree chiefly, which furnishes the Kafir warriors with shafts, for their javelins or Hassagais.

Common in the districts of George, Uitenhage, Albany and Victoria. Fl. January—February.

61. CHILIANTHUS ARBOREUS. BURCH. (*Wilde Vlier.*)—*Branches* and *twigs* alternate, angular, tomentose. *Leaves* opposite, stalked, oblongo-lanceolate, acute, veiny, entire, hoary beneath, much resembling those of the common *Olive-tree*. *Flowers* numerous, small, white, paniculated. *Panicles* large, fastigiate, not unlike those of *Sambucus nigra* (Elder.) *Calyx* 4 cleft, bell-shaped, tomentose. *Stamens* 4, exserted; *style* 1, short. *Capsule* ovate, 4 valved, 4 seeded.

A small tree. *Height* without the branches about 10 feet; *diameter* 8 to 10 inches. *Wood* hard and tough. Used for common furniture, chairs, table-feet, &c.

To be met with in the Cape, Swellendam and Uitenhage districts. Fl. November—December.

LAURINEÆ. JUSS.

62. OREODAPHNE BULLATA. NEES AB. E. (*Stinkhout, Stinkwood.*) Much branched. *Branches* divaricating, smooth. *Leaves* alternate, leathery, elliptical, veiny, netted, glabrous, entire, attenuated into a channelled stalk, and having at the axils of the lower costal veins on the underside deep hollows, ciliated at their edges, and showing on the upper surface corresponding blisterlike protuberances. *Flowers* small, racemose;

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racemes lateral or axillary. *Perianth* 6 parted; lobes obtuse, deciduous. *Corolla* none. *Stamens* 9; glands of the outer-stamens large, capitate. *Style* tapering; stigma peltate. *Berry* surrounded at base by the enlarged, thickened, cub-shaped, tube of the perianth. (Hooker. Bot. Magz. t. 3931).

Height from 20 to 35 feet, diameter from 3 to 5. *Bark* dark grey, moderately thick. The *wood* of this beautiful tree (Mr. BARROW's African Oak*), smells very disagreeably when cut or worked at. It is hard, very durable, takes an excellent polish, and resembles *Walnut*. In the Colony it is extensively used no less for building purposes, than for cabinetmaker's and carpenter's work. It furnishes the finest and most substantial articles of furniture, is superior to every other wood in the manufacture of gunstocks, and serves the wagonmaker also for various purposes. At the river *Knysna*, where this tree attains a considerable size, it has been employed even in ship-building.

In consequence, perhaps, of the peculiar odour, exhaled by this wood when fresh, furniture made of it, is not infested by vermin.

Grows in the primeval forests throughout a great portion of the Colony, and is even found in the bushy ravines of Table mountain. There however it is never allowed to become a stately tree, owing to the wanton usage of firing the mountain every year, a practice, which not only destroys the most valuable timber, but greatly diminishes the supply of water, the occasional want of which in summer, would not be felt so often, if the legislature were either to enact proper laws against the continuance of this outrage, or to enforce, in a modified form, those in existence.† Fl. October.

PROTEACEÆ. R. BR.

63. LEUCADENDRON ARGENTEUM. B. BR. (*Witteboom; Silver-tree.*)—*Branches* and *twigs* round, rough, erect, tomentose. *Leaves* crowded, sessile, alternate, lanceolate, glandular at top, entire, silky. *Flowers* dicœcious, capitate in both sexes. *Capitula* many-flowered, terminal, solitary, surrounded with imbricated leaves. *Bracts* dilated, imbricated, tomentose. *Calyx* 4 parted, regular. *Stamens* 4; *style* filiform; *stigma*

* The true African Oak of commerce is: *Oldfieldia Africana*. Benth. & Hook.

† In former times very severe laws against this crying evil, which amounts to Arson, and should be Felony, were enacted by the Batavian Government. I refer those, who take an interest in this matter to a proclamation, issued on the 8th April 1680, and republished on the 19th April 1687; further to an edict, bearing date: 16 May 1713, and lastly to another, dated 19th January 1741.

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oblique, clavate, emarginate; *cone* of female flowers ovate, large; its scales obtuse, concave, woody. *Nut* black, one seeded, wingless, inclosed within the scales of the *cone*.

Height from 8 to 10 feet; diameter from 8 to 12 inches. *Bark* thick. *Wood* soft, spongy, and liable to be infested by insects. Used occasionally for boxes, &c., but more commonly for fuel.

This handsome tree is, on account of its fine silvery foliage, seen at a great distance, and has a very limited station, being peculiar only to Cape Town and vicinity. Fl. September—October.

64. PROTEA GRANDIFLORA. LIN. (*Wagenboom.*)—Much branched. *Branches* purplish, erect, smooth. *Leaves* alternate, oblong, sessile, glabrous, blunt, leathery, veiny, entire, callous at top. *Flowers* hermaphroditical, capitate, terminal. *Capitula* large, half-round, terminal, involucrated. *Involucres* many-scaled; outer scales ovate, clothed with a rust coloured shag; inner ones spathulate, smooth. *Perianth* 2 partite, tomentose; *staminiferous laminæ* cohering; *style* awl-shaped, persistent. *Nut* one-seeded, bearded.

Height about 6 feet; breadth 6 to 8 inches. *Bark* brown, thick, much rent. The *wood* has a reddish tint; its grain is beautifully reticulated, and renders it useful for ornamental furniture. It is sometimes employed for fellies, ploughs, &c. The bruised *leaves*, mixed with a satnrated solution of iron in water, produce a tolerably good, black writing ink. The bark furnishes a superior article for turning; is used as an astringent in Diarrhœa, and good charcoal is often made of the wood. Abundant in many parts of the western districts, and particularly common in Hout Bay. Fl. April.

65. LEUCOSPERMUM CONOCARPUM. R. BR. (*Kreupelboom.*)—*Branches* spreading, very hairy. *Leaves* sessile, oval, rigid, veiny, calloso-dentate towards the top, villose at base. *Flowers* hermaphroditical, capitate, terminal, yellow. *Capitula* many-flowered, involucrated. *Involucres* imbricated, persistent; *scales* ovate, pointed, recurved, villose on the outside, smooth within. *Perianth* irregular, 2 partite, bearded. *Stamens* 4; *style* filiform; *stigma* thick, elongated, unequal-sided, smooth. *Nut* one-seeded, glabrous, white.

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Stem from 5 to 8 feet high, and from 4 to 6 inches in diameter; dwarfish, with a flat, broad top. *Bark* brown, thick, cragged. *Wood* reddish, tough but soft; looking well when varnished. In the colony it is sometimes used for wagon-fellies, but oftener for making charcoal, and for fuel. The *bark* furnishes one of the best materials in the tanning of skins, and a decoction of it is recommended as a powerful astringent.

Common near Cape Town and in other parts of the colony. Fl. September—October.

66. BRABEIUM STELLATIFOLIUM. R. BR. (*Wilde Amandelboom; Wild Almond.*,—*Branches* purplish, villose at top. *Leaves* whorled, petiolate, lanceolate, acute, serratodentate, rigid, veiny, smooth, green above, pale and netted beneath. *Petioles* very short. *Flowers* polygamous, fascicled, spiked, white, sweet-scented, supported by *one* common bract. *Spikes* axillary; *peduncles* tomentose. *Perianth* 4 leaved, regular; *stamina* 4; *style* filiform, vertical. *Fruit* dry, one-seeded; *kernel* bony.

Stem from 8 to 10 feet high, and from ½ to 1½ feet broad. *Bark* thick, greyish-brown. *Wood* red, reticulated, looking extremely handsome when polished, and fit to be used for ornamental joiner's and turner's work. As yet is has been little employed except as firewood. The bark of this proteaceous plant also contains a great deal of the tanning principle. The fruit, a drupe, is clothed in a velvety coat, and has received the vernacular name from its striking similarity to the almond. After having been soaked for some days in water, it is eaten by the natives, being considered obnoxious when quite fresh. The *kernel*, when roasted, is used as coffee.

Found in the thickets and woody ravines on the east side of Table Mountain, and in many other localities. Fl. December.

SANTALACEÆ. R. BR.

67. FUSANUS COMPRESSUS. LIN. (Thesium Colpoon, Thbg.) (*Pruimbast.*)—*Branches* trichotomous, erect; *twigs* angular, compressed, smooth. *Leaves* on short stalks, opposite, ovate, entire, mucronate, glabrous. *Flowers* moncœcious, small, paniculate, terminal. *Corolla* none. *Perianth* turbinate, 4 cleft; *stamens* 4; *style* short; *stigma* 4 lobed. *Drupe* baccate, obovate, one-seeded.

Height of stem from 4 to 5 feet; diameter 4 to 6 inches. *Bark*

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grey, thin. *Wood* heavy, fine grained; useful to the turner and joiner, and very fit for fancy work. The whole of this bush contains a great deal of tanning matter, and is for that reason employed by many colonists for that purpose.

Common in most of the western parts of the colony. Fl. May.

MOREÆ. Endl.

68. Urostigma Natalense. Miq.—Much branched *Branches* patent, wrinkled, white, smooth. *Leaves* at the top of the branches stalked, obovate, bluntly pointed, entire, membranaceous, glabrous, penninerved and netted beneath. *Flowers* monœcious, crowded, enclosed within small, fleshy, globose, pisiform *receptacles*, which are solitary, axillary, almost sessile, and supported at their bases by 3 bracts.

The wild *Fig-tree* (the t'Kaa of the Hottentots), grows to a considerable height; its diameter being from 8 to 10 inches. *Bark* white, smooth. *Wood* light, spongy, very porous. The *fibres* of the *bark* serve the natives for the manufacture of very serviceable ropes.

Common in the aboriginal forests of the Uitenhage, Albany, and Victoria districts; also in Caffraria proper and at Port Natal. Fl. July.

AMENTACEÆ. Juss.

69. Salix Gariepina. Burch. (*Wilgeboom; Willow-tree.*)—*Branches* smooth, pendulous. *Leaves* narrow, lanceolate, acute, sawed, glabrous, glaucous beneath. *Scales* of the *catkins* downy. *Male catkins* cylindrical; *stamens* 5; *female catkins* racemose. *Capsules* stalked, ovate, 2 valved. (Burchell.)

Height from 15 to 20 feet; breadth from 1½ to 2. *Bark* brown, almost like cork. *Wood* white, light, soft, liable to attack by insects of the beetle tribe. The larger twigs are used for spars in house building, the slender ones in the manufacture of baskets, &c.

This tree much resembles the weeping-willow, and grows chiefly along the banks of the river Gariep.

CONIFERÆ. Juss.

70. Widdringtonia Juniperoides. Endl. (Cupressus. Lin.) (*Cederboom; Cedar-tree.*)—*Branches* purplish, squarrose, twiggy. *Leaves* opposite, minute,

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decussate, densely imbricate, appressed, ovate, connate, bluntly pointed, glabrous, glanduliferous. *Flowers* dicœcious. *Male catkins* terminal, solitary; female-ones, lateral. *Cones* globose, 4 valved; *valves* woody, erect, mucronate.

This valuable tree, if not disturbed, attains a very considerable size. Its usual height, however, is from 15 to 20 feet, and its diameter from 3 to 4. The *wood* resembles fir, has a peculiar smell, and makes valuable timber for ship and housebuilding. It is also useful to the cabinetmaker for various kinds of furniture: chests, drawers, chairs, tables, wardrobes, &c., which are durable on account of the resinous smell of the wood, which keeps them from the aggression of insects.

Sir JAMES ALEXANDER, in his exploring expedition into the interior of Africa (vol. I., pag. 230, sqq.), in making mention of the *Cedar tree*, remarks, that one of them was cut down in 1836, which was 36 feet in girth, and out of whose giant arms 1,000 feet of planking were sawn. He bitterly complains, that this noble tree is fast disappearing in the Cedar Mountains. Mr. W. VON MEYER,* another South African traveller, says: that in former days the whole of the mountainous chain, to which the Cedar Mountains belong, was studded with these trees, but that of late the *axe* and *conflagrations* have done their *utmost* to *destroy the valuable forests*.

From the branches and cones of this tree exudes a gum, which soon hardens in the air, becomes solid, yellowish, and transparent, and scarcely differs from the *Gummi Obilanum*, an article well known to commerce. This gum is successfully used in the form of fumigations in gout, rheumatism, or œdematous swellings; and is also employed for the purpose of compounding plasters or preparing varnish.

Found only in the Cedar Mountains, in the Clanwilliam district.

71. WIDDRINGTONIA CUPRESSOIDES. ENDL. (Thuia Thbg.) (*Sapreehout.*)—*Branches* alternate, erect. *Leaves* quadrifarious, imbricate, sessile, appressed, oblong, blunt, smooth. *Inflorescence* and *fructification* like that of the preceding species.

Attains the height of 12 feet, and measures 6 to 8 inches in diameter. The *wood* is rather light, but said to be of service for cooper's work, especially in the manufacture of pails.

Not uncommon in elevated localities throughout a great portion of the colony, but seldom allowed to grow to maturity, in consequence of the destructive fires already alluded to.

* Reisen in Süd-Africa, während der Jahre 1840 und 1841. Hamburg, 1843, 8vo. pag. 131.

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72. PODOCARPUS ELONGATUS. L'HERIT. *(Outeniqua Geelhout.)*—*Branches* whorled, spreading; *twigs* angular, somewhat compressed. *Leaves* almost sessile, alternate, narrow, linear-lanceolate, acutely mucronate, entire, smooth. *Flowers* dicœcious; *male catkins* terminal, clustered, spiked, surrounded at base with imbricate bracts. *Stamens* several, short. *Female catkins* stalked, axillary, solitary, destitute of bracts, one-flowered. *Drupe* one-celled, roundish, elliptical, half immersed in the fleshy receptacle.

Height from 30 to 70 feet, diameter from 3 to 7. *Bark* thin, grey, smooth. *Wood* yellowish, close-grained, not unlike deal, but destitute of resin.

Extensively used in the colony as timber, in the shape of beams, planks, floors, &c., but also for all kinds of carpenter's and joiner's work, such as bedsteads, tables, presses, chairs, in fact, for common furniture of every description, and looks exceedingly well when polished. The lofty, upright stem of this noble tree, is excellent for masts of ships. Common in the primeval forests of the Knysna, where it is found in greatest perfection.

73. PODOCARPUS THUNBERGII. HOOK. *(Kaapsche Geelhout; Cape Yellow-wood.)*—*Leaves* broad, oblong, lanceolate, blunt with a callous point, glaucous, one-nerved, leathery. *Branches*, flowers and fruit, as in the preceding species.

Usual height from 6 to 8 feet; diameter from 10 to 15 inches. *Bark* thin, whitish-grey. *Wood* yellow, but much lighter and greatly inferior to that of the preceding species. It is, however, fit for common furniture and agricultural implements.

The leaves of this tree, which grows in wooded spots between Cape Town and Grootvadersbosch, East of Swellendam, are the broadest of the South African species of the genus.

The above pages were in the hands of the printer, when I received by post, through the kindness of Mr. JOHN SCHEUBLE, of Cradock, near Port Elizabeth, living branches of some interesting trees, the woods of which I had previously obtained from that gentleman. These afford to me the opportunity of identifying the

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trees to which they belong, and to make the following additions to my treatise:—

CAPPARIDEÆ. Juss.

74. Niebuhria Caffra. D. C. (Capparis Triphylla. Thbg.) (*Witbosch-hout.*)—*Branches* divaricating; *twigs* angular. *Leaves* stalked, trifoliate; *leaflets* oblong, entire, mucronate, smooth, pale on the lower surface; *stipules* very small, acute. *Flowers* peduncled, terminal, or axillary. *Corolla* none. *Calyx* funnel-shaped, 4 parted, persistent. *Receptacle* cylindrical short. *Stamens* numerous, affixed to the receptacle; *anthers* ovate, 2 locular. *Style* elongated; *stigma* capitate. *Berry* ovate.

Height 20 feet; diameter from 9 to 15 inches. *Bark* greenish-white, almost smooth. *Wood* white, light, tough, resembling *white-beech*. Well adapted for the inner lining of furniture, fellies, agricultural implements, &c.

This handsome tree grows in the Addow Bush, and in the forests of the Uitenhage and Albany districts. Fl. October.

MYRTACEÆ. Juss.

75. Eugenia Zeyheri. Harv. (*Wilde Jambos.*)—*Branches* squarrose. *Leaves* opposite, elliptic-lanceolate, shortly petiolate, entire glabrous, slightly revolute. *Flowers* stalked, axillary, small. *Calyx* 4 cleft; *petals* 4; *stamens* numerous; *style* 1. *Berry* subglobose, crowned with the withered calyx.

Height from 15 to 20 feet; breadth from 9 to 12 inches. *Bark* thin, grey, longitudinally rent. *Wood* white, hard, heavy, fine-grained, somewhat resembling *white maple*. Fit for the manufacture of carpenter's tools, ploughs, axles, &c. *Fruit* edible.

In the forests of the Van Stadensbergen, and near Uitenhage. Fl. December.

SCROPHULARIACEÆ. Juss.

76. Halleria Elliptica. Thbg. (*Oudehout.*)—*Branches* opposite; *twigs* erect, quadrangular, patent. *Leaves* oblong, narrowed towards each end, serrate, rigid, smooth. *Flowers* peduncled, axillary, standing

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in two's. *Corolla* nearly equally lobed, tubular at base, bell-shaped at top, purple, nodding. *Stamens, style,* and *berry* as in *Halleria lucida. Lin.*

Height 6-10 feet; diameter 8-9 inches. *Bark* white, smooth. *Wood* yellowish, soft but tough. Used chiefly for plough-beams, axe-handles, &c.

In the woods of the Uitenhage district, and other parts of the colony. Fl. June.

Amongst the blocks of wood in my possession, there is one which I have as yet been unable to classify, owing to the want of flowering or fruit-bearing specimens. Judging from a branch with leaves which I have seen, it may probably belong to *Rubiaceæ*, bearing some resemblance to *Canthium Pyrifolium.* Klotzsch.

77. CANTHIUM? (*Cape Teakwood, Kaapsch Kajatenhout.*)—*Branches* white, decussate; *twigs* compressed. *Leaves* opposite, shortly stalked, ovate, bluntly acuminate, entire, veined, revolute, coriaceous, glossy, perfectly smooth.

This tree grows 15-20 feet high, and from 9-10 inches broad. *Bark* brown, rimpled. *Wood* yellowish, hard, tough, less brittle than oak.

It serves in the manufacture of rural utensils, but is chiefly employed in the form of staves for cooper's work, and grows in the forests of the Uitenhage district.

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EXPLANATION OF BOTANICAL TERMS.

Abortive and *abortion*, terms used, where the symmetry of the flower is not complete, or imperfectly developed.
Achenium, the fruit of the family of the *Compositæ*, which is one-seeded and does not open, but the *pericarp* of which is separable.
Acuminate, tapering at top; sharp-pointed.
Acute, pointed, not tapering.
Alternate, placed one above another.
Angular, having angles on the margin.
Anther, a membranaceous body, borne by the filament, containing a dust-like powder.
Areolate, divided into distinct angular spaces.
Arillus, a fleshy coat surrounding the seed.
Attenuate, gradually diminishing in breadth.
Axillary, growing in the axil.
Baccate, berried, covered with a soft flesh.
Beaked, terminating gradually in a straight point.
Bilabiate, two-lipped.
Bipinnate, if a compound leaf is divided twice in a pinnate manner.
Brachiate, when branches issue nearly at right angles.
Bract, a floral-leaf; a leaf from which flowers proceed.
Callous, hardened, indurated.
Calyx, flower cup, the exterior covering of a flower.
Capitate, formed into a head.
Capitulum, a head of flowers in *Compositæ*.
Capsule, a membranaceous seed-vessel, opening by valves.
Cartilaginous, hard and tough.
Catkin, a deciduous unisexual spike, whose flowers are destitute of calyx and corolla, but supplied with bracts.
Channelled, concave, so as to resemble a gutter.
Ciliated, fringed with short, stiff, marginal hairs.
Clavate, club-shaped, gradually thickening upwards.
Compound, composed of several parts.
Compressed, flattened.
Cone, a dry fruit formed by scales, covering naked seeds.
Connate, united at base.
Cordate, heart-shaped.
Coriaceous, leathery.
Corolla, the inner envelope of the flower, constituting what is commonly called *the flower*.

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Corona, scaly or petal-like bodies, intervening between the petals and the stamen.
Corymb, a raceme, in which the lower stalks are longest, and the upper ones so shortened, that the flowers are placed in one horizontal plane.
Costate, provided with ribs.
Crenate, having rounded marginal teeth.
Cyme, a branched inflorescence resembling an *umbel*, where the flowers seem to lie in one plane, the successive central flowers expanding first.
Cylindrical, having a cylindrical shape.
Deciduous, falling off after having performed its functions, as the calyx of *Grewia occidentalis*.
Decussate, crossing at right angles.
Dichotomous, divided by two's; forked.
Didymous, growing in pairs.
Dicœcious, a plant is called dicœcious, when male and female organs appear upon different individuals.
Divaricating, issuing at an obtuse angle.
Drupe, a fleshy fruit, enclosing a hard nut.
Dry, not fleshy.
Ellipsoidal, a solid with an elliptical figure.
Elliptical, pointed at both ends.
Emarginate, having a notch at the point.
Entire, without marginal teeth or incisions.
Epigynous, placed above the ovary.
Fasciculate, standing in bundles.
Fastigiate, having a pyramidal shape, from the *branches* being parallel and erect.
Ferrugineous, rust-coloured.
Filament, stalk, bearing the anther.
Filiform, thread-like, slender.
Flexuous, waving, bent in a zig-zag manner.
Foliaceous, leafy, having the appearance and structure of a leaf.
Follicle, a fruit, formed by a single carpel and opening by one suture.
Glabrous, smooth, bald.
Glanduliferous, bearing glands.
Glaucous, covered with a pale-green bloom.
Globose, round, spherical.
Hermaphroditical, a flower is so called when both sexual parts are contained in the same cover.
Hirsute, rough-haired, covered with long stiff hairs.
Hispid, covered with long rigid hairs.
Imbricated, sessile parts covering or overlapping each other like tiles.
Impari-pinnate, unequally yoked, pinnate leaves ending in an odd leaflet.
Inflorescence, a term applied to the way in which flowers are arranged on a stalk or branch.

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Involucre, bracts, surrounding a head of flowers in a whorl.
Involute, rolled inwards.
Lanceolate, tapering gradually to each end.
Leaflet, the division in a compound leaf.
Legume, a seed-pod with two valves, the seeds of which are fixed on one and the same suture, but alternately upon the 2 valves.
Linear, very narrow; when the length much exceeds the breadth.
Limb, the broad part of a petal, or a leaflet, forming part of the calyx.
Lobed, divided into segments.
Loculi, cavities in an anther or fruit.
Membranaceous, having the appearance and structure of a membrane.
Monadelphous, having the stamens united into one bundle.
Monoecious, when male and female flowers are separated from each other, but grow upon the same individual plant.
Mucronate, abruptly terminating in a hard, sharp point.
Oblong, elliptical, obtuse at each end.
Obtuse, blunt, not pointed.
Ovate, egg-shaped, broadest at base, narrowed upwards.
Panicle, an inflorescence, where subordinate stalks are again divided.
Papilionaceous Flower, butterfly-shaped, consisting of 4 petals, the vexillum, two alæ and the carina.
Patent, spreading, horizontally.
Pedicel, the stalk, supporting a single flower.
Peduncle, the general flower-stalk.
Peltate, shield-like, flattened and expanded at top.
Pendulous, hanging down.
Penni-nerved (leaf), whose ribs are disposed like the parts of a feather.
Perianth, a term used, where the calyx and corolla are combined, partaking of the nature of both.
Persistent, remaining attached.
Petals, flower-leaves, leaves forming the corolline whorl.
Petiole, the leaf-stalk.
Pinnate (leaf), a compound leaf, having leaflets arranged on each side of the central rib.
Pinna, a leaflet.
Pisiform, having the shape and size of a pea.
Polygamous, plants, bearing hermaphroditical, as well as distinct male and female flowers.
Pubescent, covered with short and soft hairs.
Quadrangular, four-sided, four-angled.
Quadrifarious, in four rows.
Raceme, a cluster of flowers, where from one common stalk undivided flower-stalks arise.
Receptacle, the expanded part of the fruit-stalks, which bears the parts of fructification.

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Reflexed, bent backwards.
Reticulated, netted.
Revolute, rolled-backwards.
Rigid, stiff, inflexible, not easily bent.
Rotate (Corolla), whose limbs spread out at right angles.
Rugose, wrinkled.
Rhomboid, oval, somewhat angular in the middle.
Scabrid, rough, covered with short, stiff hairs.
Serrate, toothed, like the indentations of a saw.
Sessile, stalkless.
Spatulate, shaped like a spattle.
Spike, an inflorescence, where stalkless flowers are arranged on a common axis.
Squarrose, when parts spread at right angles from one common axis.
Stamen, the male organ of a flower, formed by the filament or stalk, and the anther.
Stigma, that upper part of the female organ of a flower, which has a soft spongy structure, and is destined to the reception of the impregnating principle.
Stipule, a leaf-like appendage, situated at the base of real leaves, or of leaf-stalks.
Style, the columnar or filiform elongation of the pistil, which supports the stigma, and proceeds upwards from the ovary.
Ternate, composed of three leaflets.
Terminal, on the summit.
Tetragonous, having four angles.
Trifid, divided into three segments.
Tomentose, covered with dense, entangled, rigid short hairs.
Trichotomous, having the division of three's.
Trifoliate, consisting of three leaflets.
Truncate, lopped off; terminating abruptly.
Turbinate, formed like a top.
Umbel, an inflorescence in which numerous stalked flowers arise from one point
Umbilicus, the hilum or base of a seed.
Valve, the portions, which separate self-opening Capsules.
Verticillate, ranged in whorls.
Vexillum, standard, the upper petal of a papilionaceous flower.
Villose, shaggy, covered with long, weak hairs.
Whorl, a kind of inflorescence, in which the flowers are placed around the stem or branch on a common axis.

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APPENDIX.

MYRICA CORDIFOLIA, LIN.—THE CAPE WAX-BERRY MYRTLE

Non omnes arbusta juvant, humilesque *Myricæ*.
VIRG. ECLOG. 4. 2.

ABOUT a century ago it was the opinion of Naturalists, and believed by most people, that *wax* was a mere vegetable substance, a primary constituent of plants, and especially found in the *pollen* or dustlike powder, which fills the cells in the *anthers* of flowers. From these it was supposed, that the wax was extracted by the labouring bee, then transformed and modified by animal digestion, and ultimately used for the purpose of making the combs of the bee-hive. Recent researches, however, and particularly the acute observations and sagacious experiments of HUBER (*New Observations on Bees*), have proved this theory to be erroneous; showing, that bees' wax is really the peculiar secretion of the working bee.

Yet wax is likewise a vegetable production, frequently seen, not only on the upper surface of the leaves of many plants, but also on the epidermis of various fruits, viz: the plum, grape, fig, &c., forming what is called the bloom, and serving apparently as a kind of varnish against moisture.

There are, besides, plants, which produce vegetable wax in great abundance, and amongst them the genus *Myrica* has long been known for its fecundity in yielding this substance. Wax obtained from the *Myrica Cerifera* (the candles' berry myrtle), an American shrub, which grows plentifully in the swamps and marshes of Carolina, Virginia, and Pennsylvenia, has been an article of commerce more than a century ago, and appears to have been exported in the form of cakes from these American colonies to England, long before their struggle for independence commenced.

At the Cape six* species of *Myrica* have been discovered, named, and botanically described. All of them are ceriferous, but parti-

* Myrica Cordifolia, Serrata, Quercifolia, Brevifolia, Kraussiana, and Burmanni.

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cularly the following three, of which a somewhat detailed diagnosis is here given :—

I. MYRICA CORDIFOLIA. LIN.

Shrubby. *Height* 2 to 6 feet above ground ; *stem* erect, smooth, ash-grey, very branchy. *Branches* curved and ranged in whorls ; the upper leafy-ones pubescent. *Leaves* crowded at top, small, sessile, smooth, rather stiff, nearly cordate, toothed, bluntly pointed, and covered on the under surface with impressed resinous dots. *Flowers* forming *catkins* in the axils of the branches and on the stem ; *male catkins* spiked ; *scales* ovate, concave, fringed ; *female catkins* ovate solitary. *Fruit* berry or drupe round, of the size of a 5 gr. pill, and covered with a white waxy crust.

II. MYRICA SERRATA. LAMK.

Shrubby. 2 to 3 feet high. *Branches* striped, pubescent. *Leaves* alternate, oblongo-lanceolate, attenuated into leaf-stalks, downy, unequally jagged on the margins, green above, and covered beneath with numerous yellow dots. *Catkins* axillary ; *scales* ovate, pointed. *Drupe* smaller as in the preceding species.

III. MYRICA QUERCIFOLIA.* LIN.

Shrubby. *Stem* 2—4 feet high, erect. *Branches* spreading in whorls, curved, downy. *Leaves* alternate, obovato-oblong, blunt, attenuated at base, smooth, slashed about one inch long, bearing resinous dots on the lower surface. *Inflorescence* as the former species. *Fruit* rather small.

Myrica Cordifolia and *Myrica Serrata* have been figured and imperfectly described by J. BURMANN,† from drawings, made by order of Governor S. VAN DER STELL, but not the slightest mention is made of their utility, or peculiarity in yielding wax. The first and principal information with regard to the usefulness of the wax-berry myrtle in the Cape colony, is contained in a letter, addressed to the Revd. Mr. A. BUURT, at Amsterdam, by the Revd. Mr. J. F. BODE, then minister of the Dutch Reformed Church in Cape Town, and of which the following is a faithful translation :—

"Cabo, March 1st, 1777.

"REVEREND SIR,—By this opportunity I send you a small box, containing three sea-plants, with which, I hope, you will be pleased, and a small branch,

* *Myrica Laciniata* Willd. is nothing but a variety of this species.

† Rariorum Africanarum plantarum decades 10. Amsterd. 1739. 4to, pag. 262—263. Tab. 98, fig, 1 and 3.

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covered with white berries. This is a shrub that grows on the sandy hills, or downs, between the *Cape and Stellenbosch*, and whose fruit, when boiled in water, furnish a beautiful wax.

"I have, I believe, transmitted to you some years ago a specimen of this wax, which, however, had turned out to be of greenish tint.

"This shrub has been taken little notice of hitherto, or rather neglected, but in October and November last, some persons have commenced collecting the berries, preparing from them a kind of wax, which is useful for all purposes where wax is needed. A muid of the berries yields 15—20 lbs. of wax. In course of time this may become an article of commerce, for the plant grows in the dry sands, where nothing else will thrive, and of that description of soil we have overabundance. Who can tell what more may be discovered.

Speaking of the fruits or berries, I must observe, that the *sparrow hawk** is extremely fond of them, and that they should be gathered before the great heat of the summer sets in, in order to prevent their melting on the bush, as is already visible on some of them. There are several farmers here that have collected some hundreds of pounds. I do not exactly know the size of the shrub, but I presume, it cannot be less than 5 or 6 feet in height. All this I hope to ascertain myself, &c.

"J. F. BODE.†

The Revd. A. BUURT, Amsterdam."

The wax-bush referred to in this document, is the *Myrica Cordifolia*, a shrub, not only common in the locality named, but also in the sandy tracts, which gird the shores of the Colony. It is as abundant at Cape l'Agulhas, and in the downs of Algoa Bay, as in the vicinity of Cape Town, and will probably be found likewise on the Western Coast. Few plants are better calculated to keep down the loose shifting sand than this, and for that reason alone, it would be of infinite service, were it not for the additional benefit derived from the waxy coat of its drupes. When the intelligent wanderer drags his weary steps through the deep sands of these inhospitable wastes, he will meet with a bush, which at first sight appears to be low and insignificant. On closer inspection the delusion will become evident, for what seemed at a distance a middle-sized shrub, is now discovered to be branches only of a subterraneous, creeping trunk of considerable length.‡ It should be remarked here, that the male plant attains a larger size than the female.

Wax obtained from plants of the Myrica tribe, exudes from the

* The bird alluded to in this letter, is *Colius Capensis*, the muisvogel of the colonists.

† Neue kurzgefasste Beschreibung des Vorgebirges der guten Hoffnung. Leipz. 1779. 8. pag. 217 and 218.

‡ The wood of this shrub is very brittle; hence its vernacular name of Glashout (Glass-wood.)

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surface of the fruits, chiefly towards the time of their maturity. It is exhaled in a liquid state, but soon hardens when exposed to the atmosphere, and forms a white powder, which under the microscope displays the shape of minute scales.

This *vegetable-wax*, and that prepared *by bees*, must be regarded as a concrete fixed oil. Both kinds are indifferent to the action of acids, and contain a large proportion of *Oxygen*. Vegetable wax differs however in the following points.

Myrica-Wax, before it is bleached, has a greenish hue; its specific gravity exceeds that of animal wax; it is harder, more brittle, easily powdered, and melts more readily. It contains besides a good deal of a peculiar substance, which is analogous to *Stearine* or *Stearic-Acid*, and which, for that reason is called *Myricine*. *Bees-wax* contains a smaller quantity of this ingredient, but a much larger one of *Cerine*, another constituent of wax. *Vegetable-wax* dissolves in boiling turpentine, and combined with Alkali's forms a compound, possessing the properties of *Soap*. In manufacturing candles, an equal proportion of tallow, ought to be added to it, in order to make them burn bright, for candles prepared from the wax alone, give a rather dim and insufficient light.

The proper time for collecting the fruit of Myrica, are the months from May to November, when they are found to have arrived at maturity. At all events, the bush and its branches should be preserved in the process, and the rude manner, in which the berries have generally been gathered hitherto, ought to be abandoned. The ripe fruit, being but loosely attached to the branches, may be stripped off with ease, or be obtained by placing a piece of canvas underneath. By striking the bush gently with a stick or shaking it, the fruit will drop off on the canvas.

The Candle Berry Myrtle is best propagated by sowing its seeds, which ought to be done in autumn, after the first rains have steadied the sand, which is its principal location, although it thrives as well, and as vigorously in richer soil, nay even ascends mountainous regions, removed for many miles from the sea-shore. *Lichtenstein* found the *Myrica Cordifolia* abundantly on the Zwarteberg near Caledon, but the bush did not exceed two feet in height, an observation, which has since been corroborated by subsequent Botanists. These shrubs may also be multiplied by cuttings and layers, a practice generally adopted for their propagation in the gardens of Europe.

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The method of separating the wax from the fruit is at once simple and cheap. A quantity of berries is thrown into an iron pot or kettle, nearly filled with water. The water is made to boil, and the wax which is melted out, swims like oil on the surface. It is then skimmed off, and on cooling assumes the consistence of wax, which, through the admixture of colouring matter, displays a pale, green hue. By boiling and straining the wax repeatedly with clean, fresh water, and exposing it to the sun, it becomes purified, and perfectly white. It has been calculated that 6 to 7 lbs. of the Myrica drupe will yield at an average one pound of wax.

The advice given by LICHTENSTEIN and other authors, to clean vegetable wax by means of Muriatic Acid, is reprobated by URE, who states, that neither Chlorine nor even Chlorides of Lime and Alkalis, can be employed with advantage to bleach wax, because they render it brittle, and impair its burning quality.

L. PAPPE, M.D.

THE BERRY WAX PLANT.

The following is the Prize Essay on the cultivation of this valuable plant, for which the Agricultural Society have awarded Mr. Feeny a sum of £10. Also the Paper upon the same subject submitted to the Society by Mr. Bowie, for which the Society have voted £5 to that gentleman :—

INFORMATION REGARDING THE WAX-BERRY PLANT.

Should the following particulars relating to the above subject, be considered of interest by the gentlemen composing the Agricultural Society of the Cape of Good Hope, it will not only afford me pleasure to learn that I have been the means of communicating something not known before, but satisfaction in having performed a duty. They are the result of my own observations during the past years; and will be detailed according to the order of the advertisement throughout, beginning with

SOILS AND SITUATIONS IN WHICH IT IS FOUND TO GROW MOST LUXURIOUSLY.

The soil in which I find the Wax-berry Plant, or Bush, most luxuriant, and the berries largest, is a mixture of marl or pot clay, in appearance as sub-soil, with more or less sand on the surface.

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This soil is always soft and damp to the foot, whether clothed or not, by the presence of "brak-water" all the year round, either on or close to the surface. It is strongly impregnated with salt, and abounds in decayed marine animalculæ, clearly indicating a recession of the sea not many ages hence. The situation being along the sea shore, and of course within the influence of the sea breeze, which, it would appear, is salutary to the growth of the plant in its native state. And although it may be found in other situations, especially amongst rocks and stones of the limestone kind, a considerable distance from the shore, still, the sub-soil by which the roots are nourished, partakes more or less of the quality above described. Whereever a Wax-berry Bush is found, water in some quantity may be found under its roots; and although the bush may be seen on the top of a high mound, or hill, yet its roots have their hold in the wet soil—the elevated position of the bush having been the result of a partial drift some time previous. Fresh water may also be found under the roots of many bushes; but in such localities, though the bushes may be plentiful, the berries are generally small and scarce, and seldom considered worth the gathering.

THE BEST MODE OF PROPAGATING AND CULTIVATING IT.

It may be propagated anywhere in sandy ground where the water does not recede too quickly in summer for the roots to follow it, and where sufficient vegetation already exists to cover the berries from view of the birds, by merely strewing them over the surface. The first shower of rain will do the remainder, providing the sand be soft, and the sub-soil suitable. But to cultivate it by breaking up ground is another thing, and will be expensive in the outset. For this purpose something must be sown with the berry to screen its shoot when it appears over the ground, from the birds. Most birds common to the flats live upon it, especially the spreeuw, and kwik-staartje; the former pick it from the bush and ground when it falls off, the latter pluck the tiny shoot out of the ground as soon as it appears on the surface, no doubt expecting something eatable to turn up with its root.

Pyp grass seed should, therefore, be prepared for the purpose; it is the only grass on the flats whose seed can be gathered in any considerable quantity, and grows best, like the wax-berry bush, in saline soil. When it is the object to sow largely, and where the ground is pretty level, it may be prepared the same as if for any of the cereal grains, with the exception that it may be necessary to

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harrow twice. After ploughing, and manure and grass seed are strewn over harrow deep, crosswise, in order to make the field the more even, then strew over the berries, and harrow as light as possible. The less covering the better; indeed none would be needed were it not for the spreeuw, one flock of which would denude acres in a few hours. Or, omit the last harrowing, and let advantage be taken of the first rainy day to strew the berries. The first half hour's rain will cause them to be sufficiently covered, the ground being soft and loose.

To plant sand hills the berries should be nursed in pots, boxes, or something portable, and transplanted about the beginning of winter, so as to afford the plants the full benefit of the rainy season; spitting and mixing the sand with rich loam for each plant as far as the spade will admit. By these means, the roots will have penetrated deep enough before the heat sets in to be out of the reach of its influence, should the hills not be unusually high above the general level.

In planting sand hills or flats that may be drifting, or indeed any sand without a considerable share of loam, neither grass seed nor any of the cereal kinds can be depended on as a sufficient protection; a few gusts of wind from the north or south would set the sand in motion before either would be strong enough to bind and cover the surface. Small inexpensive screens should be used for this purpose; any kind of bush or reed will last two years, by which time the vines of the plant will have sufficiently multiplied to protect themselves.

OF COLLECTING THE BERRIES AND EXTRACTING AND PREPARING THE WAX.

Anything hollow, from the size of a plate to that of a schepel measure, placed under the branch with one hand, while the other is employed in rubbing off the berries, will be found the most useful in collecting them from the branches; besides which, every person gathering berries should have a cloth the size of a small handkerchief about his person; that, where a bush whose vines are partly buried in the sand is met with, the vine may be lifted gently, the cloth placed under, and when the berries are rubbed off, the vine may be replaced without the slightest injury; a muid bag to be kept at hand to receive such small quantities in the mean time. Where berries are found large and abundant, one man can gather two muids a day with ease in this manner,—such berries, from being large, would realize 14 lbs. of white wax to the muid.

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With respect to extracting and preparing the wax, although I have had defecators made since the last Agricultural Show, by the use of which the process of extracting the wax is simplified; yet, for the benefit of parties who may not wish to incur the expense of such articles, I will here explain the process by which the best specimen of wax then exhibited, was got up.

A small quantity of berries at a time was put into a pot of boiling water, so proportioned to its size as to admit each berry to have cast its wax to the surface. This small quantity was not in the water more than two minutes when skimming commenced, the berries being stirred gently with a ladle during that time. The wax was then skimmed off rapidly, to avoid the colour from the pulp. To receive the skimmings, a small keg, with one end out, was prepared; over this end two flannel strainers were fastened, through which the wax was strained, and when the keg was full, the wax being yet a liquid, was again strained through flannel into a mould that gave it shape. After each skimming, the boiler, being too large for removal with facility, was baled of its contents, water and all, cleaned with mops and hot water, refilled with water either cold or otherwise, and the fire applied with all despatch.

This having been performed in the open air, an hour was often consumed between each process in getting the water up to boiling heat, while the process itself did not occupy more than five minutes from the time the berries were put into the boiler until the skimming ceased. To save so much time and labour, the necessity for something with which to enclose the berries in the boiler, became apparent; hence the construction of the defecators alluded to.

There are two of them; they will be sent for the inspection of the members. The brass defecator is adapted to the berries towards the close of the winter, when the pulp is dry. The pulp being then brittle, will break into small particles in the water, and float to the top with the wax. It was found more difficult to sever such particles by straining, than it was to avoid the colour by despatch; the decayed pulp conveying a darkish, and the juice of it a greenish colour to the wax. The other defecator is adapted to the berries in their season. It is of iron wire, and has a dash. The berries, when sound, well winnowed and picked, will admit of their being tossed about a little, either before or when full ripe. The vanes of the dash are so shaped as, when set in motion, to hitch the berries in succession towards the surface of the water, thus affording additional

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facility for each berry being rid of its wax. The application of either of these instruments with a brass strainer and cock fitted to a mould (that will be produced at the same time), will save four-fifths of the labour and time lost in preparing water, gathering fuel, baling, mopping, and straining, as described in the former process. In working either one minute and a half will suffice for its immersion with the berries in the boiler; more time than this will extract the juice and discolour both the wax and the water. The dregs and other substances that may have escaped in cleansing being retained by the defecator, some warm water should be at hand in which to rinse it after every second or third immersion. By attending to this particular, and to the time above specified, the same water will answer all day, replacing that, of course, which was taken out with the wax in skimming.

The wax being the produce of the pulp, it is to be observed that the latter will retain more or less of the former until the berries are quite ripe. To ascertain this, let the berries remain in the water some time after skimming, and should any wax appear, it will be of the colour of the juice, and will show at once that the berries are not ripe. However, as wax so made is objectionable only from its colour, and is valuable to the farmers and their servants, it may be procured by a second skimming until the berries are seasoned,—care being taken that such skimmings are put into a separate vessel from that in which the first skimmings are deposited. These remarks are applicable to parties who, having commenced making wax at a distance from their homes, may not find it convenient to return and wait for the proper season.

I will conclude with remarking, that I have not found all the bushes in any locality bearing berries the same year, and the coarsest kind have not borne at all during the last five years, while others have borne yearly. This would indicate sexual properties: yet, whilst admitting the possibility of such qualities, I am aware that a large portion of bushes are barren both from age and from an unfavourable position—having had berries at Deep River in 1850 from bushes that have not borne since; and having found the berries in my own neighbourhood drop from the bushes before attaining half the usual size, year after year, some of them not even appearing larger than pin-heads.

I have not found the plant bear under the fourth year in any situation.

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Frost, should it happen any time during the season, will cause the berries to drop from the bushes and disappear; in this particular it will be seen the wax does not differ from animal fat.

The defecators should have been larger;—the makers, Messrs. Fell, would, I have no doubt, have made them neater, and better adapted for the purpose, had they been instructed by a person of some ingenuity. With a defecator about a fourth larger than the iron one, two men would realize 100lbs. of white wax a day; and as the average quantity of wax in a muid is 11lbs., the average work of a picker, 1½ muids a day, it will be seen that six men picking from the bushes would be sufficient to keep the two men defecating supplied with berries. The expense of labour, &c., would not exceed 18 shillings per 100lbs.,—about two pence the lb. I have been particular in making this estimate. The berries, I may add, are none the worse for sowing by being stript of the wax in the defecator: it improves them.

CON. FEENEY.

Cape Town, 15th Sept., 1853.

ON THE CULTURE OF THE WAX-BERRY.

Of the genus *Myrica*, or wax-berry, there are five species and two varieties (described in various botanical works) which are indigenous in S. Africa.

The genera *Myrica* ranks in the natural arrangement of plants, in the order *Amentaceæ*, and sub-order *Myriceæ*. And, in the sexual system of Linnæus, in *Classis* 21, *Monòècia*, section 2. *Declinia*, *Ordo* 4, or *Tetrandia*.

Character of the genus Myrica, *Flowers* unisexual, monœcious or dicœcious, arranged in catkins. *Scales* of the catkin, single flowered, concave. *Stamens* 4. *Styles* 2. filiform, *Drupe* 1-celled, 1 seeded, covered by waxy scales. *Sprengel Gen. No.* 583. *Harvey, S. Afr. Gen.* p. 309.

Description of S. African species—

1. *Æthiopica*, M. leaves in form elliptic, toothed on the margin towards the point, margin at the base entire (i. e. not toothed).

Note.—Of this species, two varieties have been alluded to in published works. Of the present species, a figure, table 48, figure 8, appears in *Plukenet's Phytographia*, Londini, 1691,—1705, 4to.

2. *Serrata*, M. leaves lance-shaped, attenuated towards the point,

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sharply serrate, hairy. Catkin bisexual, scales egg-shaped, pointed. *Habitat*, common on all soils, Cape district.

Note 1.—A figure of this species is given in "*Joh. Burmanni, rariorum Africanarum plantarum, Decades* 10. *Amstelœdami*, 1738, 1739 4*to*."

Note 2.—This species is common to the Cape district, and in every variety of soil.

3. *Quercifolia*, M. leaves oblong, bluntly waved at margin, the young branches downy, i. e. having a velvety or cottony appearance. *N. J. Jacquin, Fragmenta botanica, Fascic.* 2 *tab.* 1 fig 4.

Note.—Of this species, there are two varieties cultivated in the British gardens, differing only from each other, in one of them being slightly hairy in the leaves.

Habitat.—Sandy soils of the Cape district, and S.E. coast.

4. *Laciniata.* M. leaves oblong, linearily divided from the margin towards the mid-rib in a feather-like manner. The younger branches covered with resinous punctures. *Catkin androgynous* and solitary, scales blunt. *Habitat*, principally in the George District.

5. *Cordifolia.* M. leaves somewhat heart-shaped (margin serrated), sessile, closely produced so as to be somewhat imbricate.

Of this species, there are also two varieties, one being entire (or smooth) on the margin of the leaves. Pluk. ph. t. 319. fig. 7.

Habitat, Cape Flats, &c. N.B. in former times, very abundant about Muizenburg.

In addition to the foregone recorded species, six or seven other species and varieties were collected above thirty years ago, in the Districts of Swellendam and George, and of which no description has been made public.

The soil most congenial to the growth of Myricæ, is that of a sandy nature, dark in color, from the vegetable matter which it contains, but such is the nature of this and many other South African *genera*, that they appear to thrive in soils and situations of very opposite character, and be equally productive on loamy sand, as they would on the lighter and richer bog earth. In the latter, if very moist, and insufficiently drained, the plant would be injured by the stagnate moisture.

The first species on the list No. 1, is met with both on stiff and light soils, and more frequently than the others, in rocky situations.

No. 2. *Serrata*, generally on level ground, and all descriptions of soil.

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No. 3. *Quercifolia*, in like situations, very frequent with No. 2.

No. 4. *Laciniata*, more commonly on sandy loan or clay soil.

No. 5. *Cordifolia*, affects a more moist soil, although to many persons, it appears to grow well on the purest sands, as may be observed on some parts of the Cape Flats; but this is owing more to the age of the plants having, in the first instance, vegetated in a better soil, the sand afterwards accumulating by degrees about their stems, keep the roots cool and comparatively moist, enabling the plant to resist the drying heat of the atmosphere, and extend both root and stem in all directions; the latter generally forming new roots contribute to the support of the plant.

REARING, PLANTING, &c.

The *M. Cordifolia*, producing the largest berry, is the species recommended for culture as being the most profitable in crop, but also in the character of growth, its spreading branches more rapidly covering the ground than any of the other species.

In the months of April or May, prepare substantial boxes of 12 inches in width, and the same in depth inside measure, and of any convenient length, perforating the bottoms with small holes, covering them with gravel or small stones to the depth of 2 inches, then filling the boxes to about one and a-half inch of the tops with black vegetable sandy soil, or with a mixture of decayed (2 year old) leaf mould and of sandy loam in equal parts. Sow the berries thickly on this, and cover them with half an inch of soil, pressing it smoothly down, and thus leaving a space of about one inch for the reception of rain, or the occasional watering required in dry weather.

The boxes to be placed in a shaded situation from the sun, but not under the shade of trees, as the plants would be drawn up weakly. The soil should be kept moderately moist, and as equally so as possible; alternate extremes of drought and moisture check and injure the protruding radicle of the seed. The seeds will, if fresh, vegetate in about three weeks or a month, and as the young plants appear above ground, they must be kept free of weeds, and occasionally supplied with water.

When the plants are about twelve months old, they ought to be large enough for planting out, and this should be effected during the months of May, June, or July, as the most likely season to ensure success. On planting out at this season, they may be placed in patches to not less than four feet, nor more than nine feet apart, patch from patch. If the ground to be planted should be very sandy, or

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entirely so, holes may be dug out at the proper distance, and filled in with at least a cubic foot of earth, similar to that used in the boxes, tramping the same firm before the plants are inserted, and unless showery weather happens at the time of planting, it will be necessary to apply water by hand.

If boxes are not made use of, the ground to be occupied may be prepared in patches as above, and the seeds sown at once, placing about a dozen of the berries in each patch, keeping the plants free from weeds, and thinning and regulating at the proper season, such plants as are to remain.

On better soil, and such as can be prepared by the plough, the seeds may be dropped thinly into drills drawn at from six feet to nine feet apart, and at the same time might be sown with rye, this would shelter the *Myrica* for a time, but as the rye would require manure, and which is generally used in a fresh state, or nearly so, it would injure the *Myrica* and no *experienced* persons would risk the trial. To sow the berries broad-cast would be a waste of seed, and cause infinite labour hereafter, to thin the crop to a proper distance.

The *Myrica* may be also propagated by layering the one or two year old branches, and by cuttings of the young ripened wood. The first mode would strike root the most readily, but be more troublesome and less efficient than raising the plant from seed.

As to gathering the crop when at maturity, the best way is to spread a sheet or cloth under the shrub to collect any berries which may fall while gathering the principal part by hand, a labor which may be performed by children or by the aged or infirm. Thirty-seven years ago, much of the shrub was destroyed from the Cape Flats, by tearing them up, root and branch, and carrying them off the ground by wagon loads, losing much of the berries in carrying and destroying, for the future. This very reprehensible practice was checked by the then Governor, Lord C. H. Somerset's Proclamation, forbidding the practice.

As to bleaching the wax, it is supposed that beyond a second boiling, in pure water, it would not answer the grower or the collector's purpose, or remunerate him for extra trouble. A farther bleaching may be effected by melting and drawing the wax into thin strips, and exposing them to the atmosphere. Another method is by letting the melted wax fall upon a large wooden cylinder, one half of which revolves under pure water, causing the wax to form thin flakes, which are afterwards exposed to atmospheric action. Various trades

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have their own chemical modes of purifying both bee and berry wax, but with which the writer of the paper is not sufficiently acquainted to give sufficient information, and therefore pens only the results of experienced knowledge.

J. Bowie.

15th Sept.—P.S.—It may be useful to observe, that the roots, stems, and leaves of all the species are more or less astringent, antipsoric and vermifuge. Some of the leaves have been used as a substitute for tea, and in brewing: the strong scent of the leaves drives away insects, and the bark of the root and stems, with the younger branches are useful in tanning skins. B.

*** It ought to have been observed in the above, that after the *Myrica* are established, the plantation will only require to be kept free from all other species of shrubs which may spring up, and which must be eradicated on their first appearance; and the occasional heading down of the *Myrica* when, through age, they become less productive, in order to obtain a young and more fruitful growth. B.

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